

B-83 Micropropagation of papaya (*Carica papaya* L.) from mature field grown trees

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Papaya, a common and a commercially important fruit, is propagated conventionally from seeds and considerable variation exists in plantations. To overcome this problem clonal materials have to be used as planting materials. Tissue culture has now become a valuable tool for rapid clonal propagation of plants but there are some problems limiting its application to papaya.

Shoot explants obtained from mature trees 'clone P-65' were cultured on MS (Murashige and Skoog, 1962) medium supplemented with 0.02 mg/l kn and 0.02 mg/l IAA for culture initiation. Contamination-free shoots collected from initiation medium were then transferred to different media for shoot multiplication. At an early stage, shoots responded poorly to media. However, after 5 - 7 sub cultures, slow but constant shoot growth have been observed. BAP (0.045 - 0.225 mg/l), was the most effective promoter for shoot multiplication. Addition of adenine sulphate (40 mg/l) and casein hydrolysate (500 - 1000 mg/l) to the medium enhanced axillary shoot growth. MS medium supplemented with BAP (0.225 mg/l), adenine sulphate (40 mg/l), casein hydrolysate (500 mg/l), NH_2PO_4 (170 mg/l), and riboflavin (3.77 mg/l) resulted in a dramatic improvement in shoot growth and an average of 7 - 10 shoots (>10 mm) were produced per culture after 3 weeks duration. Microcuttings cultured on MS medium modified with 4.06 mg/l IBA and 3.77 mg/l riboflavin produced 100% rooting under initial dark treatment of 5 days. Rooted plantlets were established in a soil mixture of soil, cattle manure, and sand (2:1:1).