B-149 Complete plantlet regeneration through callus interphase in papaw (*Carica papaya* L, 2n=18)

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Development of a sound micro-propagation technique is a must for papaya to achieve uniformity in yield and quality characteristics as well as to produce planting material free of virus diseases. In this perspective, it was tried to establish an *in vitro* procedure to develop true to type planting material through callus initiation and organogenesis.

Different sources of explants: shoot tips, stem and petiole segments, leaf disks and roots from *in vitro* and *in vivo* germinated seedlings were used for callus initiation.

The rate of contamination was extremely high with field grown planting material but *in vitro* germinated seedlings gave promising results. Callus initiation could be observed from all types of explants used, when cultured in MS basal medium supplemented with 1 μM 2,4,-D and 6 μM BAP. 2,4-D alone also could initiate callus at 4 and 6 μM concentrations. Calli originating from different sources of explants showed different morphological features: shoot tip explants: light green, large and friable; leaf disks: pale green and compact; stems: yellowish white and hard; petioles: whitish and compact; roots: creamy white and watery. In all types of explants, dark conditions promoted callus proliferation. Shoot regeneration could be induced successfully when the callus is subcultured in MS medium supplemented with 1 μM NAA and 2 μM BAP. The callus originated from shoot tip explants showed the best performance compared to the rest. The highest rate of multiplication obtained was 1:8 after 10 days. The induction of roots could be done successfully when subcultured onto the rooting medium (MS + 10 μM IBA) under reduced light. Roots initiated via a callus phase at the base, as small, white protrusions. After about 45 days of subculture, those protrusions elongated fast and started branching profusely. Completely regenerated plantlets were transferred to pots successfully.