D-02: *In vitro* propagation of *Melia dubia* (Lunumidella) by shoot tip culture

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Melia dubia is a fast growing indigenous timber species with a very high potential for timber. However, large scale planting of this species is highly restricted by its poor seed germination capacity owing to the presence of a hard endocarp and its short viability. These factors contribute to poor germination percentage despite the many pretreatments applied. The current research emphasise on *in vitro* shoot tip culture to overcome this obstacle and produce seedlings on a mass scale for establishment.

Excised shoot tips of *Melia dubia* taken from juvenile sprouts were surface sterilized using 0.1% HgCl and cultured for 5 min on the solid full strength Murashige and Skoog (MS) basal medium supplemented with 6-Benzylaminopurine (BAP) and Indole 3-butyric acid (IBA) in varying concentrations in a growth chamber at 25°C with a light source of 100 lux for 16 h/day photoperiod to allow shoot proliferaton. Shoot tips cultured on full strength MS medium devoid of growth regulators was used as the control.

The highest shoot proliferation was observed in full strength MS medium supplemented with 1 mg/l BAP and 0.3 mg/l IBA. About 2-6 healthy shoots were developed within 24 days on this medium. The treatments with MS + 2mg/l BAP and 0.3 mg/l IBA and MS + 1 mg/l BAP produced inferior results.

In vitro grown shoots were then excised and cultured on five media combinations for rooting: ½ strength MS devoid of growth regulators, ½ MS supplemented with 0.3 mg/l IBA, ½ MS supplemented with 1 mg/l IBA and full MS supplemented with 1 mg/l IBA and full MS supplemented with 2 mg/l IBA. Rooting was not observed in treatments with low IBA concentrations within four weeks. Full strength MS medium supplemented with 2 mg/l IBA promoted callus formation in four weeks and a single root appeared on each after seven days of callus appearance.