IN VITRO CALLUS PRODUCTION OF *Pterocarpus santalinus* L. (RED SANDAL) THROUGH NODAL CUTTINGS, SHOOT TIPS AND LEAF DISCS

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Pterocarpus santalinus L. is highly demanded rare medicinal plant, which is used in Ayurveda and not naturally occurred in Sri Lanka. It is used as home remedies since ancient times. There are records on few cultivated plants in dry areas especially in southern part of the country. Normally plants are propagated by fresh seeds, but it requires special treatment for seed germination. Not only that, the percentage germination is also very low. With the aim of developing a protocol for mass propagation through *in vitro* techniques, nodal cuttings, shoot tips and leaf discs from tender leaves at rejuvenation period were used as explants. Explants were cultured on basic Murashige & Skoog (MS) medium supplemented with Kinetin, NAA, BAP, IBA, & Calcium panthothenate at a range of concentrations and on B_5 medium supplemented with BAP and Kinetin at different concentrations. While 3% (W/V) sucrose was added (pH = 5.7) to MS medium, 2% (W/V) sucrose was added to B_5 medium (pH = 5.5). Agar at 0.8% was added to both media for solidification. Cultures were incubated at 25±1° C temperature and kept under different light intensities. Callus initiation was observed after 14-21 days of incubation in 16 hr light. Callus was initiated and continued growth only in 16hr light condition in MS medium. In B_5 medium callus was initiated but not continued the growth any further. Best explant source for callus production was nodal cuttings. Embryogenic callus was obtained from leaf discs in MS medium, mainly from the cultures incubated in dark. Small amount of embryogenic callus was initiated under light conditions in the same medium. Embryogenic callus could be grown in cell cultures and thereby can produce large number of somatic embryos which may be lead to mass production of plants. The amount of callus production and the nature of callus depend on the explant type, growth regulators used and incubation conditions.Direct shoot elongation occurred at low percentage (10%) in MS medium supplemented with 0.2mg/L Kinetin, 0.1mg/L NAA, 0.5 mg/L BAP, 0.3mg /L IBA and 0.1mg/L and Calcium panthothenate. It was even lesser (<5%) in all the other media tested.