

**MULTIPLICATION OF ENDANGERED INDIAN  
SANDALWOOD (*Santalum album* L.) THROUGH  
VEGETATIVE PROPAGATION TECHNIQUES**

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## ABSTRACT

Seed propagation of Indian Sandalwood experiences difficulties since there are seed associated problems. Therefore, possibilities of obtaining clones were examined through both macro and micro vegetative propagation techniques. Macro propagation experiments were carried to find suitable types of stem cuttings, rooting media and effect of hormone (With and without hormone) on rooting of cutting. Three types of cuttings (soft, semi hard, hard) two different medium (sand, sand and coir) and one hormone (Rooceta) were tested. All softwood cuttings died within few weeks after setting them whilst most of hard and semi hard wood cuttings sprouted and survived until the end of the experiment. Nevertheless, the results showed very limited success in rooting of cutting. Capability of rooting of juvenile coppice shoots obtained from cut stumps of the mother seedlings also used to study as preliminary test in sand medium with and without hormone treatment. Better rooting of shoots was achieved in no hormone treatment. But, successful rooting was restricted by limitation of time. However, this is a feasible, cost effective and rapid method for multiplication and further studies should be carried out to achieve well developed root system. In micro propagation experiment used to establish the protocol to investigation of suitable type of explants and media composition. Three different explants (*ex-vitro* raised nodal cuttings, seedling cuttings and auxiliary shoots from *in-vitro* germinated seeds) and media, SH: Basic culture medium (MS), BenzylAmainoPurine (BAP), NapthalenAceticAcid (NAA), ascorbic acid, coconut water (CoM), SHR1: MS, 2 isopentanyl adenine (2ip), CoM), SHR2: MS, Thidaizoron (TDZ), CoM). Establishment stage of all *ex-vitro* raised explants showed browning and contamination while *in-vitro* explants were not. Among *in-vitro* explants types and three different media none of explants type and media were successful performance up to the expected level (multiplication and growth), although little performances were achieved a few *in-vitro* seedling cuttings explants on SH and SHR1 media to some extent. However all above findings of present work could be use as a beneficial tool for future research and to strength the plantation establishment.

Key words - Indian Sandalwood, macro propagation, micro propagation, multiplication, *ex-vitro* raised and *in-vitro* raised explants, types of stem cuttings, juvenile coppice shoots