Studies on *in- vitro* establishment of Red Sandalwood (*Pterocarpus santalinus* L) as affected by seed size, maturity stage, storage period and surface sterilization procedure

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Red sandalwood (*Pterocarpus santalinus* L) is an evergreen tree species grown under semi dry climates in well-drained lateric soils. It is a hard woody species and valuable medicinal plant, which is traditionally used for medicinal purposes. The reddish and fragrant heartwood has a range of medicinal, pharmaceutical, industrial and timber values. Very few number of plants were recorded in Sri Lanka. According to the previous work, the main propagation method of this plant is through seeds but germination rate is very low. A limited number of Red sandalwood plants are available in Sri Lanka and fruit bearing habit is seasonal. Therefore, alternative propagation technique has to be developed for conservation and multiplication of Red sandalwood plants in Sri Lanka. In this regard, studies on *in- vitro* techniques for mass propagation of Red sandalwood is timely important.

Experiments were conducted to study the micro-propagation of Red sandalwood as affected by seed size, maturity staged, storage period and surface sterilization procedure. All treatments were arranged in a Completely Randomized Design (CRD) with ten replicates. Murushige and Skoog media was used as the basal medium.

The highest survival rate (85%) was recorded in the treatment of 0.1 % $HgCl_2$ for 16 min for sterilization while the lowest survival rate of 10% was observed in10 % NaOCl for 10 min with the seed size of > 25 mm diameter. It was recorded 100 % germination and seeds with < 10 mm diameter were not germinated at all. Sometimes they did not have embryo. Embryos isolated from seeds, harvested at fully matured light brown stage showed a significantly ($p \leq 0.05$) higher germination of 90 %. Embryos isolated from fallen seeds were not germinated. Seeds stored for a period of one week recorded 90% germination. When storage period increased up to one month, the germination rate was decreased up to 31%.

It could be concluded that embryos isolated from fully matured light brown seeds with size of >25 mm, stored for a period of one week can be used for culture establishment after surface sterilizing with 0.1 % $HgCl_2$ for 16 min.