

GERMINATION AND SEEDLING ECOLOGY OF *SANTALUM ALBUM* L.

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Santalum album (Sandalwood) is an economically important obligate woody root hemiparasitic tree naturalized in the wet and intermediate climatic zones of Sri Lanka. In recent years, there has been a rising interest in planting Sandalwood in Sri Lanka due to high domestic and international demand for the α and β Santalol oil obtained from the heartwood. Santalol is used for the preparation of expensive perfumes, cosmetics, and medicines. This study examines the germination and seedling ecology of *S. album*. Twenty seven randomly selected trees in three populations growing in the intermediate zone of Sri Lanka were sampled (3 randomly selected plants/plot/ population) to study the fruit and seed variations. The seed germination study included seven treatments and two replicates (36 seeds/replicate). The best substratum for the pre-parasitic Sandalwood was identified by growing seedlings in three potting mixtures containing sand, top soil and farm yard manure in the ratio of 2:1:1, 3:1:0, and 1:1:1 respectively. The experiment included three treatments, three blocks, two replicates, and 20 seedlings/replicate. To evaluate the best pot-host species, one-month-old Sandalwood seedlings were grown in polythene bags, with five potential host species separately and without the host species as a control. The experiment comprised five treatments and a control, three blocks, two replicates, and 10seedlings/replicate. Fruit length, width, and seed length of *Santalum* varied significantly ($p < 0.001$) among the three populations thus suggesting the size of reproductive structures is dependent on environment. Seeds treated with 750ppm gibberelic acid showed the highest (>80%) germination rate. Seedlings grown in equal parts of sand, soil, and farm yard manure showed a significantly higher ($p < 0.001$) height, root collar diameter, and number of leaves compared to those grown in the other potting mixtures, indicating that pre-parasitic Sandalwood seedlings can obtain nutrients from the growing medium in addition to the original seed reserves. As the seedling performance of *S. album* was significantly higher ($p < 0.01$) with *Mimosa pudica* and *Tithonia diversifolia* compared to remaining hosts, they can be recommended as suitable pot hosts for Sandalwood.