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Vegetative propagation of Lumnitzera littorea (Jack) Voigt. by stem cuttings, girdle cuttings and air layering

Lumnitzera littorea is a highly threatened true mangrove belonging to the family Combretaceae. It is confined to a very small area in private lands adjoining Maduganga at Balapitiya. Seedlings and young plants are absent in the natural habitat. Attempts to propagate by seeds had failed. Consequently, conservation measures are essential and urgent. The present research was initiated to study the possibility of propagating *L. littorea* by vegetative means.

Vegetative propagation was, tried out using stem cuttings, girdle cuttings and by air layering. Distilled water, water from natural habitat and 25%, 50%, 75% dilutions of habitat water were used as liquid media for root initiation, in stem and girdle cuttings. Cut basal ends were immersed in the medium in dark bottles. All stem cuttings wilted within one week of collection not showing any sign of root induction. The addition of activated charcoal, dipping cut ends in commercial rooting powders, [*e.g*. Secto containing Naphthyl acetic acid, Clonex and Seridox both containing Indol butyric acid] and varying concentrations of Indole acetic acid (IAA) solutions did not induce rooting in stem cuttings. Leaving cut basal ends of stem cuttings in a solution containing 0.5 mg/L to 2.0 mg/L IAA did not induce root formation. Stem cuttings in solid substrata containing a mixture of sand, coir dust and compost in varying proportions keeping habitat soil as the control failed to root. A maximum of 30% root formation was observed with girdle cuttings when immersed in distilled water. Neither habitat water nor different dilutions of it induced rooting. Root formation was remarkably successful in air layering. Three different rooting media were tested keeping soil from its natural habitat as the control. A maximum of 80% layers formed well-developed roots. Neither application of Secto on the girdle and incorporation of Secto in the rooting medium nor injection of IAA to the rooting medium increased this, 80% value. Girdles and layers with well-developed root systems were transferred to cement pots containing the substrate that gave maximum rooting in layering. Tap water was used for watering. These plants were thriving well in the green house under natural temperature and light. Layers with well developed roots, recently introduced to its natural habitat without intermediary hardening process are grow well.