

## **Air-layering of endangered mangrove *Scyphiphora hydrophyllacea* in Kadolkele-NARA Regional Research Center of Sri Lanka, towards its conservation**

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*Scyphiphora hydrophyllacea* is considered as a non-viviparous evergreen shrub belonging to genus *Scyphiphora* (family: Rubiaceae). After self-pollination, growing of resulted seeds to a plant is limited under natural environment. In order to address this research gap, an attempt was made to investigate the possibility of applying air-layering on endangered *S. hydrophyllacea* which introduced to Kadolkele mangrove reserve. Two culture media were used for the investigation with six replicates. Healthy branches of *S. hydrophyllacea* were selected and a ring bark of about 2.5cm width was removed. Commercial rooting hormone powder (0.3% Indole 3 butyric acid; IBA) was applied before wrapping along the wounded portion. Selected culture media; mangrove soil, mangrove soil with coconut coir (2:1 ratio) were moistened with brackish water and strapped with polythene sheet. The rooting response was monitored constantly. Root initiation was first observed after 6–7 weeks. Approximately 25% of air-layered branches produced roots or root initials within 6-13 weeks. Compared to branches air-layered with mangrove soil, which air-layered using mangrove soil + coconut coir (2:1 ratio) had more root initials. Compared to mangrove soil medium + IBA treatment, IBA treatment + mangrove soil + coconut coir (2:1 ratio) was more successful in producing roots. Nearly 33.3% of the branches produced root initials in untreated mangrove soil medium, and 37.5% in untreated mangrove soil with coconut coir (2:1 ratio) medium. However, these root initials were unable to develop up to roots and disappeared with the time. Only hormone treated air-layered branches showed the continuous development of root initials up to roots. Under experimental level, hormone treatment for air layering of *S. hydrophyllacea* is a successful propagation method. Further studies can be extended to evaluate the adaptability of air-layered plant up to an independent mature shrub under natural environment for successful conservation.

**Keywords:** air-layering, IBA treatment, *Scyphiphora hydrophyllacea*

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