WHICH SPECIES WILL PERFORM BETTER IN MANGROVE RESTORATION FIELDS IN SRI LANKA; *RHIZOPHORA MUCRONATA* OR *RHIZOPHORA APICULATA?*

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In some mangroves, seed germination is replaced by vivipary which is the germination of a seed in a fruit while attached to the parent tree resulting in a propagule. Mangrove propagules store food enabling them to keep healthy for a long time after they drop from the mother plant and while floating with the tides or currents. However, in contrast to the seed dormancy, vivipary or propagule dependency in mangroves has received surprisingly a little attention. Hence, no data are available at least to say how long a mangrove propagule can support a seedling, despite its importance in mangrove restoration efforts as well as understanding the mangrove physiology. This study is an initial attempt to fill that void. Two viviparous species, *Rhizophora apiculata* and *Rhizophora mucronata*, having larger propagules and hence commonly used in replanting programmes, were selected for the study. The salinity regimes were selected based on the naturally occurring salinity ranges in lagoons and estuaries in Sri Lanka. Mature propagules were planted in plastic pots with a prepared soil mixture and maintained in the greenhouse under three contrasting salinities (Low-5 psu, moderate -15 psu and high -30 psu) separately over a 20 weeks period. The content of carbohydrate foods (starch) in the propagule was also monitored over the 20 week period. In both species, the concentration of starch in the propagules reduced up to the 9th week. After the 9th week, the starch content in the propagules of *R. mucronata*, started to increase slowly while that of *R. apiculata* continued to reduce but at a much lower rate. However, in both species, starch concentration was well-maintained in the moderately salinity regime and remained highest at the end of the study. Moreover, starch usage (or starch reduction rate) was significantly higher in *R. apiculata* ($8.5x10^{-6}$ $molL^{-1}week^{-1}$ (SD+/- $1.1x10^{-6}$) than in *R. Mucronata* ($5.7x10^{-6}$ $molL^{-1}week^{-1}$ (SD+/- $0.9x10^{-6}$). Based on the variation of stored food (starch concentration), *R. mucronata* may perform better in restoration fields as it nourishes the propagule for a relatively longer period while keeping starch concentration to a set point by maintaining optimum starch usage rate.

Keywords: Mangroves, Propagule, Restoration, *Rhizophora*, Starch concentration