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Seedling establishment and growth of *Pemphis acidula* Forst. under green house conditions

Pemphis acidula is a mangrove associate confined to few small pockets in accessible coastal area. Seed production is around 100%. Neither seedlings nor young plants are to be seen in the neighbourhood of mother plant.

Effect of the nature of substrate, exposure to direct sunlight, salinity and external supply of nutrients on establishment and growth was tested. Five different mixtures of substrates were used keeping soil from its natural habitat as the control. One month old homogenous seedlings were potted in clay pots and twenty replicates per treatment were used under green house conditions. Percentage survival was recorded as the parameter of establishment. Height, number of emerging leaves, length and width of selected leaves (1, 3, 5, 7 and 9 from the base of the stem) at maturity were recorded to judge the growth. Observations were recorded once a month for a period of 18 months. A completely randomized block design was used for all experiments. Results were analysed by the "Minitab" statistical package and comparison of treatment effects was done by Turkey's test at 5% significance level.

Both establishment and growth are significantly controlled by the substrate. Percentage survival was highest (80%) in sand: coir dust mixture. Survival in soil from the natural habitat was 0% after 18 months. Maximum growth (about 24 cm) was observed in sand: cow dung mixture after a period of 18 months. Growth was enhanced (maximum 30 cm) when supplied with Hoagland solution (starting from quarter strength gradually increased to full strength) as an external nutrient source. Seedlings watered with saline water from its natural habitats (up to 34 ppt) dried and died even before six months. Seedlings kept in shade died before two months. Sandy nature of the substrate (unstable), high salinity (up to 34 ppt) in soil water exerting toxic effect on seedlings and lack of adequate sunlight when growing under the canopy of mother plants might have limited the survival and growth of *P. acidula* seedlings in its natural habitats. Survival of seedlings in the garden of the institute and also at the Mangrove Resources Centre at Chilaw lagoon is encouraging. *P. acidula* may even be popular as an ornamental plant that would grow in pots and home gardens.