

**CHARACTERISATION OF A PUTATIVE HYBRID
BETWEEN
Avicennia alba AND *Avicennia marina*
BY
RANDOM AMPLIFIED POLYMORPHIC DNA
(RAPD) MARKERS**

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Abstract

The relationship of the four *Avicennia* species (namely, *A. alba*, *A. marina*, *A. officinalis* and *A. rumphiana*) as well as the status of the putative hybrids between *Avicennia alba* and *Avicennia marina* in Singapore were studied using the Random Amplified Polymorphic DNA (RAPD). *Lantana camara*, which belongs to another family, (Verbenaceae) was used as the control species. Optimisation of $MgCl_2$ concentration, DNA template concentration, RAPD annealing temperature and the selection of primers useful for our RAPD amplification reactions were also carried out. Cluster analyses using Jaccard's Coefficient and the Simple Matching Coefficient were carried out with the RAPD band profile data using nine different primers. The results indicated a close genetic relatedness between the putative hybrids and their parents in relation to all taxa. The RAPD data also showed that the putative hybrids are more closely related to *A. alba* than to *A. marina*. A morphometric analysis of the taxa was also carried out based on data studied in field collections. Principal Component Analysis showed a greater morphological relatedness of the putative hybrids with one of the parents, *A. alba* than *A. marina*. The results correlated well with the RAPD analyses. Southern blot analyses of the four taxa concerned were also carried out to confirm homology of the RAPD bands that were shared by the taxa concerned.