

Genetic diversity and relationships between nine species of bamboo in Sri Lanka, using Random Amplified Polymorphic DNA

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Abstract. Random Amplified Polymorphic DNA (RAPD) showed a high degree of polymorphism in nine species of bamboo, *Dendrocalamus giganteus* Wall ex Munro, *D. asper* Becker ex K. Heyn, *D. longispathus* (Kurz) Kurz, *Bambusa vulgaris* 'Striata', *B. ventricosa*, *B. bambos* (L.) A. Voss, *B. atra* Lindley, *Gigantochloa atroviolacea* Wdjaja and *Arundinaria hindsii*, in Sri Lanka. The lowest mean genetic distance of 0.143 was between *B. vulgaris* and *B. ventricosa*. They could however be distinguished morphologically. The genetic distances separating *D. longispathus* from *D. giganteus* and *D. asper* were both greater than that between the latter two species, which had a value of 0.313. Although the genetic distances between *Bambusa vulgaris*, *B. ventricosa* and *B. bambos* were relatively small, *B. atra* separated from them at greater distances. The smaller genetic distances between *G. atroviolacea* and *B. vulgaris*, *B. ventricosa* and *B. bambos* indicated that *G. atroviolacea* had a closer affinity to these three *Bambusa* species than *B. atra*. *A. hindsii* with the greatest genetic distances from all other species in the study, was not related to any of them. RAPD analysis was useful in determining the genetic diversity and relationships and in detecting problematic generic assignments.

Keywords: *Dendrocalamus*; *Bambusa*; *Gigantochloa*; RAPD analysis; genetic diversity