

Genetic diversity of nine bamboo species characterized by Random Amplified Polymorphic DNA (RAPD) analysis

Bamboo systematics is largely based on vegetative characters due to their rare and unpredictable flowering patterns. Identification at the species level is often problematic. Genetic markers are now widely applied in systematics due to their reliability over phenotypic markers. A study was undertaken to characterize the bamboos in Sri Lanka. Random amplified Polymorphic DNA (RAPD) analysis was used to characterize nine bamboo species in the bamboo collection of the Royal Botanic Gardens, Peradeniya and its vicinity. Five primers selected out of 41 random 10-mer primers (OPERON) that were screened, produced 52 bands (DNA fragments) with DNA isolated from leaves of 13 individual clumps. The presence or absence of these 52 bands was used to enumerate the genetic distance between the samples and construct a dendrogram using the software package RAPDistance Version 1.4. Identical band patterns were not found among species. Species of different geographic origin or distributions had wide genetic distances between them. Of the four *Bambusa* species included in the study *B. attra* showed a high diversity. This species is of limited distribution in Indonesia. *B. vulgaris* with its wide geographic distribution was very close to *B. ventricosa* which is a rare ornamental. It is evident that these two species have close origins. A larger number of species representing each genera would generate more data for confirmation of species identity. Our results indicate that RAPDs can be of considerable value in characterizing bamboo species.