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DNA profiling of sugarcane genotypes using randomly amplified polymorphic DNA

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ABSTRACT. DNA profiles of 40 sugarcane genotypes were constructed with 30 RAPD markers. Sugarcane genotypes of both *Saccharum officinarum* and *S. barberi* were included in this study. Multiple alleles were detected from each RAPD; there was a high level of polymorphism. On average, 7.93 alleles were produced per primer, giving a total of 238 alleles. The genetic distances between these genotypes were assessed with the POPGENE DNA sequence analysis software. A dendrogram was constructed from these data; cultivated species of sugarcane formed clusters with *S. barberi* genotypes. The 40 genotypes were clustered into two main groups; genetic distances ranged from 20.29 to 64.66%. These RAPD fingerprints will help sugarcane breeders to evaluate the efficiency of current conventional breeding methods and will help characterize the genetic pedigree of commercial sugarcane varieties. These data will also be valuable for conservation and utilization of the genetic resources in germplasm collections.

Key words: DNA marker; RAPD; Genetic distance; Fingerprinting; Sugarcane

