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Variation of Sri Lanka yellow dwarf coconut variety at microsatellite marker loci

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Coconut germplasm in Sri Lanka is classified into three varieties, namely Tall, Dwarf and Intermediate. Tall coconuts are naturally cross pollinated while the dwarf coconuts are normally self pollinated. Sri Lanka Yellow Dwarf is used as the female parent of the improved cultivar CRIC65. Visual observations of Yellow Dwarf coconut population indicate that clear morphological differences and any genetic differences within the parental populations would result in the non-uniformity of the resultant hybrids. The objective of this study was to observe the genetic variation of Sri Lanka Yellow Dwarf coconut population at microsatellite loci to verify the variation at the genetic level.

Six yellow dwarf palms, two each in the dwarf like, intermediate and tall like categories were selected in the study. Sri Lanka Tall, Green Dwarf and *Gon Thembili* tall were used as reference varieties. Genomic DNA was extracted and PCR amplified at eight microsatellite marker loci. The genotypes were scored after polyacrylamide gel electrophoresis.

Allelic patterns of the Sri Lanka Yellow Dwarf palms were compared with Sri Lanka Tall, Sri Lanka Green Dwarf and *Gon thembili* varieties. The reference variety Green Dwarf scored homozygous identical alleles with the dwarf like yellow dwarf palms. In the intermediate and tall like yellow dwarf group, tall, dwarf and certain new alleles were observed.

The results indicate the genetic non-uniformity within the Sri Lanka Yellow Dwarf coconut population. In addition to the true Yellow Dwarf coconut variety, there are one or two new coconut phenotypes which have not been previously classified. Therefore, further studies are recommended to purify the Yellow Dwarf coconut variety and to distinguish the rest of the new phenotypes within the coconut populations in Sri Lanka.

Keywords: Genetic diversity, microsatellite marker, coconut

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