

Category	: 8th Rice Genetics Symposium
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Title of Entry	: DNA fingerprinting for Identification of molecular ID in rice varieties ( <i>Oryza sativa</i> L.) using Microsatellite markers (Simple Sequence Repeats)
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Select only one type of presentation	: 3-5 minute flash talk
Abstract	: Rice is important cereal crop in the India. However, the contamination of seeds reduces the genetic and physiological quality of seeds leading to decreased crop productivity. DNA fingerprinting characterization of varieties using molecular markers confers significant advantages over morphological and biochemical markers. Microsatellite can be used as ultimate molecular marker over other markers as they are co dominant and highly reproducible in nature. So they can be used in various plant genetic applications. The objective of the present study is to identify molecular ID for rice varieties. In addition to fingerprinting GOT was done to find out the genetic and physical purity. Forty rice-specific molecular primer pairs distributed throughout the rice genome were used for fingerprinting of twenty rice varieties All twenty rice cultivars were successfully amplified with the ten microsatellite primer pairs (RM 312, RM105, RM452, RM277, RM484, RM259, RM286, RM333, RM511 and RM592). Out of them RM 105, RM 312 and RM 511 were found to be polymorphic with MTU-7029, JGL-1470, Siddhi. Further RM 592 showed less polymorphism with JGL-1470, KNM-118 and MTU-1001. The single primer RM 105 amplified two alleles of 500 and 600 base pairs with JGL-1470 and Siddhi. Identified polymorphic markers RM 312 for MTU 7029 at 600bp and RM 592 for variety MTU 1001 at 280-300 bp were employed with 8 samples (Single seedling, single plant seedlings bulk, plant bulk seedlings and 4 samples from breeder). All the eight samples were shown unique banding pattern for the both markers. These markers could be used as molecular ID for above varieties. DNA fingerprinting of rice varieties by the way of microsatellites can be given useful data,

which can be increased by adding more number of microsatellite markers. The data obtained can be used for the protection of plant genetic resources using DUS (Distinctiveness, Uniformity, and Stability) characterization in different rice varieties. Hence, these markers can be used for the identification of genetic divergence among the varieties.

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