

## Genetic Diversity Analysis and Variety Identification for Rice and Sugar Apple Species Using Molecular Markers

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### Abstract

In order to identify species and protect the right of breeders, in this study, 8 rice varieties and 11 *Annona* varieties ( lines ) were used for DNA fingerprinting and assessment of genetic relationship. In rice, 132 SSR (simple sequence repeat ) DNA markers were amplified, of which 71 SSR markers were polymorphic among 8 varieties. Above all, RM5055, CH0701, RM310, RM5711, CH0165, RM202, CH0133 and CH1111 markers can be used to effectively identify 8 rice varieties, and to establish the standard operating procedures (SOP). Sixty-nine ( 75.3% ) polymorphic bands amplified by 10 ISSR (inter-simple sequence repeat) DNA primers were detected among *Annona* varieties ( lines ) . Based on cluster analysis, 11 *Annona* varieties ( lines ) were divided into three groups including *Annona squamosa*, *Annona squamosa* x *Annona cherimola*, and *Annona cherimola*. It is suggested that both SSR and ISSR DNA markers can be utilized as a tool for genetic diversity analysis and species identification.

**Key words** : Rice, Sugar apple, Genetic analysis, Molecular marker, SSR, ISSR.

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