

Sujitra Phothipan 2006: Ascertaining Genetic Lineage of Banana Varieties in AA, AAB and BB Group using Specific-PCR, RAPD, SRAP and AFLP Techniques

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Genetic relationships among 29 accessions of AA AAB and BB bananas were grouped using 4 specific PCR primer, M4(A<sub>1</sub>-1), M5(A<sub>2</sub>-1), M6(A<sub>2</sub>-2) and M22(B-1), and they were classified into 3 genome groups, AA AAB and BB. The A<sub>1</sub>A<sub>1</sub> genome was Klui Pa Phrae. The A<sub>2</sub>A<sub>2</sub> genome was Klui Hom Champa (Pa Phatthalung). The BB genome were the group of all Klui Tani varieties. The rest of wild species and hybrid cultivars of AA were A<sub>1</sub>A<sub>2</sub> genome. The AAB bananas were A<sub>1</sub>A<sub>2</sub>B except Klui Nuc Mu Nang and Klui Khai Boran. Both cultivars were A<sub>2</sub>A<sub>2</sub>B. DNA of all accessions were used for DNA fingerprinting with the techniques of random amplified polymorphic DNA (RAPD), sequence-related amplified polymorphism (SRAP) and amplified fragment length polymorphism (AFLP). Bands of DNA fingerprint were scored, analysed the genetic similarity and constructed the phylogenetic tree using the software, NTSYSpc-2.01e. The phylogenetic tree showed 2 main groups, BB and AA-AAB. The BB group were composed of 8 accessions and divided into 2 subgroups. The subgroup 1 were Klui Tani 1, Klui Tani 2 and Klui Tani Nua. The subgroup 2 were Klui Tani 3, Klui Tani 4, Klui Tani Eisan, Klui Tani Tai and Klui Tani Dam. The AA-AAB banana group were composed of 21 accessions and divided into 5 subgroups. The subgroup 1 were 6 accessions of AAB bananas, Klui Namphad, Klui Chin, Klui Roiwi, Klui Nam, Klui Khai Boran and Klui Nue Mu Nang. Their genetic relationship were closed to Klui Pa Phrae. The subgroup 2 were Klui Klai and Klui Nga Chang which were AAB and were closed to Klui Flava, Klui Pa Pli Som and Klui Pa Pli Lucang. The subgroup 3 were Klui Khom and Klui Nom Sao. The subgroup 4 were all AA hybrids except Klui Pa Abisania which was in the subgroup 5. These results showed the efficacy of three DNA techniques for banana sample ascertaining.

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