

Molecular Analysis of Somaclonal Variation in Tissue Culture Derived Bananas Using MSAP and SSR Marker

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Abstract : The project was undertaken to determine the effects of modified tissue culture protocols e.g. age of culture and hormone levels (2,4-D) in generating somaclonal variation. Moreover, the utility of molecular markers (SSR and MSAP) in sorting off types/somaclones were investigated. Results show that somaclonal variation is in effect due to prolonged subculture and high 2,4-D concentration. The resultant variation was observed to be due to high level of methylation events specifically cytosine methylation either at the internal or external cytosine and was identified by methylation sensitive amplification polymorphism (MSAP). Simple sequence repeats (SSR) on the other hand, was able to associate a marker to a trait of interest. These therefore, show that molecular markers can be an important tool in sorting out variation/mutants at an early stage.

Keywords : methylation, MSAP, somaclones, SSR, subculture, 2,4-D

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