

MONITORING OF MICROTUBERS VIRUS TESTED- DERIVED POTATO TISSUE CULTURE BY DNA FINGERPRINT ANALYSIS

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ABSTRACT

A *simple* ISSR-PCR as a routine method of microtuber PVY tested derived potato plantlets for somaclonal variations is a prerequisite for precise monitoring of quality control during rapid mass micropropagation, and effective management of microtubers genetic resources. This study reports on the use of ISSR-PCR for detection of genetic variations in micropropagated potato plants. Microtubers PVY tested- derived potato plantlets were screened using ISSR-DNA markers. Three ISSR primers were chosen as producing polymorphic DNA fragments differentiating the investigated plantlets and microtubers in vitro. DNA fingerprint revealed genetic variations, 40% polymorphisms of therapeutic plantlets, approximately 50% of the analyzed potato plantlets with 4.5 polymorphic fragments per primer. While the DNA was isolated from microtubers produced using jasmonic acid and coumarin after ISSR amplification it was obvious that microtuber identical fragments profile. The frequency of somaclonal variations was found to be virus therapeutic and microtuberization inducers. The somaclonal variations were only detected in high jasmonic and coumarin concentrations. Although minor morphological variations were recorded in the microtubers of some clones. The developed fragments profiles of different micropropagated clones were typical to that of the donor mother plants.

Key words: DNA fingerprint, ISSR-PCR, microtuber inducers, virus therapeutic.

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