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## E- Usefulness of molecular markers for detecting genetic variability in oil palm tissue cultured clones

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enetic variations can be determined at the morphological, cytological, biochemical and molecular levels with several tech-Jniques. At present, molecular markers are powerful tools used in the analysis of genetic fidelity. DNA markers are more attractive means for examining genetic variation since they are more informative and are not developmentally regulated. Among the dominant markers Random amplified polymorphic DNA (RAPD) are the most simple to use and have been used widely. However RAPDs are dominant diallelic markers and cannot differentiate alleles. SSR markers are co-dominant, simply inherited, highly polymorphic and reproducible. The sensitivity, reproducibility, co-dominance and strong discriminatory power of microsatellite DNA/SSR (simple sequence repeat) markers make them particularly suitable for detecting somaclonal variation, but their application in the study of somaclonal variation has been rather quite limited. Tissue cultured clones imported from ASD Costa Rica were planted in farmers field in the year 2005 by Godrej Agrovet Pvt. Ltd. Among the six clones planted, one clone namely Tornado was selected for this study. Twenty four palms were selected at random from a batch of 200 plants. Morphological parameters such as height, girth and number of leaves were recorded after three years of planting and all the three parameters showed variation among the palms. DNA was extracted from the spear leaf and 10ng of DNA from each sample was amplified using random and SSR primers. Ten random primers were used to study the genetic variation. After amplification, all the 10 primers produced polymorphic bands. The 20 pairs of SSR primers were designed from the reported oil palm microsatellite sequences and they were used to study the genetic variation. A new methodology was developed for separating the microsatellite amplified PCR products. The products were separated on a 7% acrylamide gel. Seven SSR markers showed polymorphism. The total numbers of alleles scored were 54. Resulting dendrogram revealed that these palms were falling into three clusters, clearly depicting that these clones were from three different origins. This study clearly brought out the fact that molecular markers are useful for detecting genetic variability.

## Biography

M.Jayanthi has completed her B.Sc and M. Sc from Tamil Nadu Agricultural University with three gold medals. She has completed her Ph.D from M. S. Swaminathan Research Foundation, Chennai under the guidance of the eminent Professor M. S. Swaminathan. She was the recipient of a CSIR fellowship for her Ph. D. After that she was working at the Tropical Botanic Garden and research institute in the area of endangered plant conservation. Then she has joined the Indian council of Agricultural Research and currently working at the Directorate of Oil Palm Research. She is the recipient of the Fast Track scientist and Women Scientist fellowship by the Department of Science and Technology. She also had an opportunity to visit the University of Guelph, Canada on a deputation programme. She has published 20 papers in the area of genetic diversity analysis and tissue culture of plants in reputed journals.

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