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TISSUE CULTURE REGENERATION OF BANANA VARIETIES AND IDENTIFICATION OF RAPD MARKERS FOR DISEASE RESISTANCE GENES

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Abstract:

Banana is an important food crop in the world. The cultivation of banana is reduced by diseases like Fusarium wilt, Sigatoka leaf spot and Banana bunchy top. These diseases, affect conventional cultivation and the increasing demand for both banana leaves and fruits. So, there is a need to produce disease resistance plantlets. Tissue culturing is a technique, used to produce disease-free plantlets which can be further screened and it can be used to identify disease resistance genes. In this work, suckers alone, sucker with shoot tip and shoots were taken as explants. The multiple shoots were observed in MS medium supplemented with Indole-3-Acetic acid (0.35 mg/L) and Benzyl aminopurine (6.00 mg/L). The roots were observed in MS medium supplemented with Indole-3-Acetic acid (0.50 mg/L). Presently the plantlets are to be screened to identify the molecular diversity within the cultivars. A PCR-based marker technique, Random Amplified Polymorphic DNA (RAPD), is to be used for their simplicity and efficiency. In this study the RAPD primers were identified from literature and the custom markers were designed. These primers were aligned with the genome using Basic Local Alignment Search Tool (BLAST) and they were checked using Primer design software.

Keywords: Banana; Micropropagation; RAPD markers

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