RESEARCH ARTICLE

THE FIELD SCREENING OF THE SOMATIC EMBRYOGENESIS CULTURES DERIVED COCOA CLONE TREES FOR THE RESISTANCE TO VASCULAR STREAK DIEBACK (VSD) DISEASE

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Abstract: Vascular streak dieback (VSD) caused by the fungus *Oncobasidiumtheobromae* is a devastating pathogen of cocoa (*Theobromae cacao* L.). This disease effects both young seedlings and mature trees. Plant tissue culture technique viz. somatic embryogenesis has a potential to overcome this problem by the development of VSD disease resistant cocoa planting materials. To ensure the effectiveness of this technique, the field screening of resistant of the regenerated cocoa clone trees to VSD was evaluated. The method used was field observation based on visual scoring of VSD infection under normal planting conditions. Thirty cocoa plants derived from immature zygotic embryo and 30 cocoa plants derived from staminode explants of Trinitario varieties were planted in field condition. Pruning to remove the infected branches was carried out to determine the relationship between characteristics of sprouting ability and VSD scoring of the severity for each regenerated cocoa clone trees. At one year of planting, it was found that immature zygotic embryo cultures derived cocoa trees were resistant than staminode cultures derived cocoa trees to VSD disease. The MCBC1 cocoa clone trees either derived from immature zygotic embryo culture or staminode cultures showed the optimum characteristics of sprouting abilitity than other type of cocoa clone trees.

Keywords: *Theobroma cacao*, Tissue culture, Somatic embryogenesis, Field experiment, Vascular streak dieback

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