

Screening of Sugarcane Germplasm and Quarantine Station for Sugarcane Streak Mosaic Virus in Sri Lanka

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Sugarcane streak mosaic virus (SCSMV; Genus *Poacevirus*, Family; Potyviridae) is a new virus caused sugarcane streak mosaic diseases in Sri Lanka. Recently, mosaic-like symptoms were observed in *Saccharum* germplasm at Enselwatta and sugarcane accessions in sugarcane quarantine station Hanthana, Sri Lanka. Identification of disease states in *Saccharum* germplasm is important because there is a possibility to transmit systemic disease through true-seeds. Therefore, this study was carried out to identify the sugarcane accessions infected with SCSMV in *Saccharum* germplasm at Enselwatta and the sugarcane varieties are being quarantined at Hanthana after importation. Hundred and fifty sugarcane leaf samples exhibiting sugarcane streak mosaic symptoms were subjected representatively and randomly from every block (10 % from total accessions) and locally bred varieties from sugarcane germplasm collection at Enselwatta, Deniyaya and quarantine station Oduwila, Hanthana to this study. Tissue cultured virus eliminated sample was used as a control sample. Total RNA was extracted from individual leaf samples using size fractionate silica based method. Two steps Reverse Transcription-PCR (RT-PCR) was carried out using most common SCSMV coat protein specific primer pair cpF (5'-GTG GGT TCA GTT CTC GGT TC-3') and AP3 (5'-TTT TTT CCT CCT CAC GGG GCA GGT TGA TTG-3') which amplify 500 bp DNA fragment of partial coat protein gene (CP) and the 3' terminal of SCSMV. Presence or absence of the disease was confirmed by the band visualized in 500 bp region in agarose gel electrophoresis. The molecular detection results of this study concluded that the virus has infected in *Saccharum* germplasm and sugarcane quarantine station indicating 91 % of tested accessions/varieties. The *Saccharum* germplasm should be re-established with SCSMV free material produced from virus elimination process, precautions to be taken during genetic material exchange and resistant varieties should be developed for SCSMV.

Keywords: *Saccharum*, Germplasm, Sugarcane, SCSMV, Revers transcription-PCR