

NOTE: Comparison of Antibody- and Genome-Based Diagnostic Techniques for *Sugarcane mosaic virus* in Sugarcane

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Different antibody-based diagnostic techniques such as direct antigen coating enzyme linked immunosorbent assay (DAC-ELISA), electroblot immunoassay, immunosorbent electron microscopy and dot blot immunoassay were compared with a genome-based technique, *viz.*, reverse transcriptase polymerase chain reaction (RT-PCR) against *Sugarcane mosaic virus* (SCMV) in different sugarcane cultivars expressing predominant and less predominant symptoms as well as in asymptomatic ones. Polyclonal antiserum raised against SCMV antigen purified from sugarcane cv. CoC 671 was used. All of the antibody-based tests reacted positively with plants showing predominant foliar symptoms; however, the sensitivity was not uniform, with samples from the plants showing less predominant symptoms and in asymptomatic plants. The RT-PCR assay method was more sensitive in detecting the virus from plants of less predominant symptoms also. Hence, a combined diagnostic system utilizing antibody-based techniques can be employed for mass screening and in quarantine operations against the virus, but in doubtful cases RT-PCR can be employed. Among the different sugarcane tissues, SCMV was diagnosed in the leaf lamina, bud, leaf sheath and midrib tissues, but root and pith tissues were negative to the virus in RT-PCR assay. In RT-PCR, 870 bp size cDNA was amplified from infected sugarcane with SCMV specific primer. **KEY WORDS:** Sugarcane mosaic virus; diagnosis; enzyme linked immunosorbent assay; electroblot immunoassay; dot blot immunoassay; immunosorbent electron microscopy; reverse transcriptase polymerase chain reaction.

Received May 4, 2003; accepted Sept. 14, 2003; <http://www.phytoparasitica.org> posting Dec. 16, 2003.

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