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RT-PCR and CP gene based molecular characterization of a cucumber mosaic cucumovirus from Aligarh, U.P., India

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ABSTRACT

A virus disease of garden sage (*Salvia splendens* Ker-Gawl.) was observed and characterized showing symptoms of severe mosaic, mottling and distortion of leaves being remain shortened and growth retarded. The virus was transmitted to the healthy plants of *Salvia* spp. as well as many other hosts by mechanical inoculation, *Myzus persicae* Sulzer and *Aphis gossypii* Glover transmit the virus in non-persistent manner. Purified sample in EM showed spherical particles c.28 nm in diameter. DAC- ELISA [1] was performed with crude sap, specific polyclonal anti-serum (PVAS 242a, ATCC, USA) and alkaline phosphatase-linked secondary antibodies (Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH or DSMZ, Germany). The mean absorbance at 405 nm for negative and positive controls were 0.061 ± 0.008 and 0.349 ± 0.003 respectively, while infected samples were recorded four-times more than the value of negative controls with values that ranged between 0.289 ± 0.005 and 0.325 ± 0.003. RT-PCR was performed using total RNA as templates and CMV Coat Protein (CP) gene specific reverse and forward primers, gel was electrophoresed on 1% agarose, an amplification of expected size 650 bp fragment was obtained only in the infected sample which proved that the present virus is a strain of CMV, the type member of the genus cucumovirus belonging to the family Bromoviridae.

KEYWORDS

Salvia; Mosaic; Non-persistent; DAC-ELISA; RT-PCR; Cucumovirus

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