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DISEASE NOTE

Detection and molecular characterization of Clerodendron yellow mosaic virus infecting *Volkameria inermis* in Pakistan

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Volkameria inermis (synonym *Clerodendrum inerme*) is a well-known ornamental plant commonly used for hedging around lawns and gardens. In 2017 and 2019, *V. inermis* plants growing at two different locations in Faisalabad, Pakistan (GPS coordinates 31.39716 N, 73.02639E and 31.40973 N, 73.15507E respectively) were found to exhibit typical begomovirus symptoms, consisting of upward leaf curling and foliar yellow mosaic. DNA was extracted from leaf samples from six individual plants and used in PCR with primers designed to amplify the DNA-A component of the bipartite begomovirus tomato leaf curl New Delhi virus (ToLCNDV-A1/ToLCNDV-A2), betasatellites (beta01/beta02) or alphasatellites (DNA101/DNA102; Zaidi et al. 2016). Amplification products were obtained with the begomovirus but not the betasatellite and alphasatellite primers. The product obtained with begomovirus primers from one sample was cloned and a single clone was sequenced. The sequence of 2760 nt was submitted to GenBank as accession No. MH454662. The sequence showed 99% nucleotide sequence identity with isolates of the monopartite begomovirus Clerodendron yellow mosaic virus (ClYMV-[IN:Iari:06]:EF408037 and ClYMV-[PK:Sa23:Cro:12]:HE863667). Additionally virus was detected in all six samples by Southern blotting using a V2 gene probe amplified with specific primer pair ClYMV-FP(GTGTGAATATTGGTTGCATCATGTGGG)/ClYMV-RP(ACCCAGGCCTGTCTTCTTGTGACG). ClYMV has been reported to infect *V. inermis* in India (Sivalingam et al. 2011) and is an infrequently encountered begomovirus with only three other sequences available in the databases. This suggests that ClYMV has a very narrow host range. In common with earlier reports, ClYMV does not appear to associate with either betasatellites or alphasatellites (Anwar et al. 2012; Sivalingam et al. 2011). *V. inermis* plants are propagated vegetatively from plant shoots/cuttings which provides a likely mechanism of spread of the virus in addition to insect transmission. This is the first report of ClYMV infecting *V. inermis* in Pakistan.

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