First report of occurrence of zucchini yellow mosaic virus in *Luffa aegyptiaca* in India

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Luffa aegyptiaca (family Cucurbitaceae) is an important vegetable crop. In July 2019, *L. aegyptiaca* plants exhibiting mosaic, blistering and deformation of leaves were observed in Pune, India. Average disease incidence was 30 percent in 3 hectares area comprising 12 fields. Leaf samples were collected from 10 symptomatic and 4 asymptomatic plants from different fields and tested by DAS-ELISA using specific polyclonal antibodies (Agdia, IN) against zucchini yellow mosaic virus (ZYMV), cucumber mosaic virus (CMV), cucumber green mottle mosaic virus, and papaya ringspot virus. All 10 symptomatic samples tested positive for ZYMV, of which 6 were also positive for CMV. Asymptomatic plants tested negative for all viruses. Leaf sap of ZYMV positive samples was mechanically inoculated to ten healthy plants of *L. aegyptiaca* cultivar Pusa Chikni, reproducing symptoms similar to field samples. The virus produced chlorotic local lesions on *Chenopodium amaranticolor* and systemic symptoms on *Cucurbita pepo*, *C. maxima*, *Cucumis sativus*, *C. melo*, *Lagenaria siceraria*, *Trichosanthes cucumerina* and *Benincasa hispida*, which was confirmed by DAS-ELISA. Total RNA was isolated from symptomatic field, mechanically inoculated and asymptomatic samples of *L. aegyptiaca* using RNeasy Plant Mini Kit (Qiagen, CA) followed by RT-PCR using ZYMV-specific primers amplifying coat protein C-terminal and 3'UTR (Verma et al. 2006), which yielded ca. 500 bp amplicons from symptomatic and mechanically inoculated samples but not from asymptomatic ones. A consensus sequence of 450 nucleotides was deposited in GenBank (MT070964), showing highest nucleotide identity (99.3%) with ZYMV

strain B (AY188994) from Israel. The sequence clustered with other ZYMV sequences in phylogenetic analysis. ZYMV has been reported in cucurbits such as *T. cucumerina*, *Momordica charantia*, *C. pepo* and *C. moschata* from India (Nagendran et al. 2015), and *L. aegyptiaca* from Taiwan (Lin et al. 2001). To our knowledge, this is the first report of ZYMV infection in *L. aegyptiaca* from India.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s42161-021-00836-y>.

Declarations

Conflict of interest The authors have no conflicts of interest to declare that are relevant to the content of this article.

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