New Disease Reports

First report of *Chilli leaf curl India virus* infecting *Mirabilis jalapa* in India

M. Jaidi, S. Kumar and S.K. Raj*

Plant Molecular Virology Laboratory, CSIR-National Botanical Research Institute, Lucknow-226001, India

*E-mail: skraj2@rediffmail.com

Mirabilis jalapa (family *Nyctaginaceae*), also known as the four-o'clock plant, is an ornamental flowering plant grown widely in gardens for the beauty of its variously coloured flowers. Possible disease symptoms (Fig. 1) were observed on a number of *M. jalapa* plants growing in the gardens of CSIR-NBRI, Lucknow (26°55′ N; 80°59′ E), India. The disease incidence was about 45% with plants exhibiting upward leaf curling and stunting in comparison with apparently healthy plants (Fig. 2). Based on the symptoms a begomovirus infection was suspected.

Total DNA was isolated from the leaves of 17 diseased and one asymptomatic *M. jalapa* plants and subjected to PCR using begomovirus degenerate primers (Rojas *et al*., 1993). An amplicon of the expected size (c. 1.2 kb) was produced from all 17 diseased samples, confirming begomovirus infection. The full length virus genome (c. 2.7 kb) was amplified using the rolling-circle amplification method, cloned and sequenced (GenBank Accession No. KX951415). The sequence showed 92-99% nucleotide sequence identity and a close phylogenetic relationship (Fig. 3) with isolates of *Chilli leaf curl India virus* (ChiLCINV) identified in *Duranta repens* (KT948070) from Pakistan, and in *Capsicum* sp. (FM877858), and *Mentha arvensis* (KT779820) and *spicata* (KF312364) from India. This shows the virus detected in *M. jalapa* to be an isolate of ChiLCINV.

M. jalapa has been reported to be infected by *Parietaria mottle virus* (genus *Ilarvirus*) in Italy, *Mirabilis jalapa mottle virus* (genus *Carlavirus*) in the USA, *Basella rugose mosaic virus* (genus *Potyvirus*) in China (Parrella, 2002; Hatlestad *et al*., 2011; Wang *et al*., 2012), and *Mirabilis mosaic virus* (genus *Caulimovirus*) in the USA (Brunt & Kitajima, 1973). Recently, *Tomato chlorotic spot virus* (genus *Tospovirus*) has also been reported to

infect *M. jalapa* in Brazil (Duarte *et al*., 2016). ChiLCINV has been isolated from *Capsicum* sp., *M. arvensis* and *spicata* in India and *D. repens* in Pakistan. This is the first report of ChiLCINV infecting *M. jalapa*.

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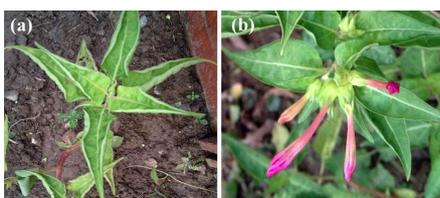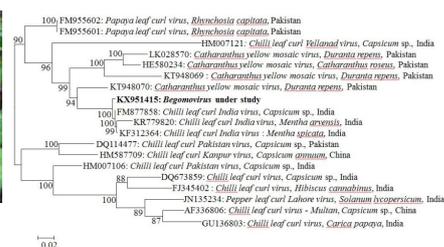
Figure 1

Figure 2

Figure 3

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