

First report of *Citrus Vein Enation Virus* (CVEV) from Iran

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(Received: 9.6.2015; Accepted: 13.6.2015)

Citrus vein enation on the leaf underside and trunk woody gall disease caused by *Citrus vein enation virus* (CVEV) has been reported from citrus growing areas of the five continents of the world (Wallace and Drake, 1961). Symptoms closely similar to these have been observed on sour orange (*Citrus aurantium*) and key lime (*Citrus aurantifolia*) trees of Golestan, Mazandaran and Fars provinces in Iran. To determine the presence of CVEV in Iran, a sour orange tree showing typical disease symptoms was chosen in Sari, total RNA was extracted from fresh bark of sample and used in RT-PCR to amplify 3' genomic region of the virus by using specific primer pairs (Vives *et al.* 2013). Following cloning and bidirectional sequencing of amplified fragments, the overlapping reads were assembled into a 2800 bp contig. Multiple nucleotide sequence alignment of obtained contig with sequences of CVEV isolates deposited in the GenBank (VE-1, PV52-IVIA and RR-IVIA isolates) was performed by DNASTAR and Clustal X programs. The results showed this isolate of the virus has more than 97% identity with GenBank isolates at nucleotide level. The coat protein region showed the highest homology with VE-1 as 97.6 and 95.5% identity in nucleotide and deduced amino acid sequence, respectively. Based on the results, this isolate was designated as CVEV-Ir which full genome sequencing is in progress. This is the first report of the *Citrus vein enation virus* occurrence in Iran.

منابع

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