



First report of tomato mosaic virus isolated from tomato and pepper in Vietnam

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Tomato mosaic virus (ToMV), a member of the genus *Tobamovirus*, has a wide host range including members of the family Solanaceae such as tomato and pepper. ToMV causes light or dark green mosaic symptoms and distortions in tomato leaves while causing mosaic, necrosis, and senescence in pepper leaves; infection of ToMV has also been identified in tomato and pepper seeds (Chitra et al. 1999; Jones et al. 2014). To evaluate ToMV infection, we collected tomato and pepper leaf samples showing typical mosaics and distortions from the two regions in Vietnam including Bao Loc city and Don Duong district of Lam Dong province in 2017. We also obtained the commercial pepper seeds from seed stores in Dong Nai province. We extracted total RNA of each sample type using RNeasy Microarray Tissue Mini kit (QIAGEN, USA), generated RNA-Seq libraries with TruSeq RNA Library Preparation Kit v2 (Illumina, USA), sequenced by paired-end-sequencing method using Illumina's HiSeq 2000 (Macrogen, Korea), and analysed as previously described (Jo et al. 2016). After assembling the raw sequence data, we obtained contigs matched to ToMV sequence from each cDNA library. To further confirm the presence of ToMV in the samples, RT-PCR was carried out with ToMV-specific primers, 5'-CGAGAGGGGCAACAACAT-3' for forward and 5'-ACCTGTCTCCATCTCTTTGG-3' for reverse, corresponding to partial RdRp region using Diastar RT-PCR kit (SolGent, Korea). Comparative analysis showed that each

contig sequence from tomato (MH393621), pepper leaves (MH393623), and the chili seeds (MH393622) was 99% identical to ToMV Queensland isolate (AF332868) with 38–43 nucleotide differences. To our knowledge, this is the first report of ToMV in the leaves and seeds of tomato and pepper in Vietnam. Due to the devastating effect of ToMV in pepper and tomato production, our results suggest the requirement of a more stringent seed production scheme for ToMV-free commercial seeds.

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