Infection of potato virus S and M in tomato in North-western India

Poonam Chaudhary¹ · Surender Kumar² · Balwinder Singh³ · Vipin Hallan² · Avinash Kaur Nagpal¹

Received: 1 March 2018 / Accepted: 13 April 2018 / Published online: 30 April 2018

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Tomato (*Solanum lycopersicum*) is an important crop that provides health and wealth to millions of people around the world. Tomato fields were surveyed for potato virus S (PVS) and potato virus M (PVM), both from the genus *Carlavirus* in the family *Betaflexiviridae*, in different regions of Punjab and Himachal Pradesh in North-western India in 2016 and 2017. Potatoes were grown prior to the tomato crop in the fields selected for this study. Leaves from 80 tomato plants exhibiting foliar mottling, mosaic, chlorosis, distortion, upward curling and rolling were randomly collected. PVS and PVM were diagnosed by RT-PCR using total plant RNA isolated with the Genei kit and primers designed from conserved regions of the coat protein gene (Crosslin and Hamlin 2011). A 738 bp PCR product of PVS and a 524 bp PCR product of PVM were obtained from two (K9 and KP7 isolates) and three (B9, M1 and KP7 isolates) plants, respectively. The PCR products were cloned in pGEMT-Easy and sequenced using the Sanger dideoxy sequencing method. The sequences of PVS

(GenBank accession numbers MG551668 and MG551669) and PVM (GenBank accession numbers MG551665-MG551667) isolates from tomato displayed 97–99% nucleotide identities with published sequences of PVS (GenBank accession number GU369814.1) and PVM (GenBank accession numbers KJ462137.1 and KJ919966.1). To our knowledge, this is the first report of PVS and PVM infection in tomato in India.

Funding This work was funded by the Council of Scientific and Industrial Research, New Delhi, India (Grant No. 38(1399)/14/EMR-II).

Reference

Crosslin JM, Hamlin LL (2011) Standardized RT-PCR conditions for detection and identification of eleven viruses of potato and potato spindle tuber viroid. *Am J Potato Res* 88:333–338

✉ Vipin Hallan
rmaivi@gmail.com

✉ Avinash Kaur Nagpal
avnagpal@rediffmail.com

¹ Department of Botanical and Environmental Sciences, Guru Nanak Dev University, Amritsar, India

² Institute of Himalayan Bioresource Technology, Palampur, India

³ Post Graduate Department of Biotechnology, Khalsa College, Amritsar, India