



Survey of potato virus X in vegetable fields of Iran

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Potato virus X (PVX) is the type member of the genus *Potexvirus* in the family *Alphaflexiviridae*. PVX is mechanically transmitted mainly in solanaceous plants (Aboul-Ata et al. 2011). This virus has a worldwide distribution and is widely distributed in Iranian potato and tomato fields (Massumi et al. 2014). During the 2015–2016 growing seasons, surveys of vegetable crop fields were conducted for PVX in Alborz and Tehran provinces in the central parts of Iran. Overall, 32 fields were surveyed and 262 symptomatic leaf samples were collected from bean, chickpea, eggplant, lettuce and pepper plants. Leaf samples were tested by double-antibody sandwich enzyme-linked immunosorbent assay (DAS-ELISA) using a specific antiserum (Bioreba, Switzerland). Results showed that PVX was present in all visited fields with an infection rate of 12.5% and 14% in Tehran and Alborz provinces, respectively. Among the tested samples, PVX occurred in eggplant (*Solanum melongena*) and pepper (*Capsicum fructigena*) plants. None of the other tested samples reacted positively with the specific antiserum in DAS-ELISA. To confirm the presence of PVX, ELISA-positive samples were tested by RT-PCR using specific primers designed in the coat protein gene (PVX-F: 5'-TAGCACAAACACAGGCCACAG-3' and PVX-R:

5'-GGCAGCATTTCAT TTCAGCTTC-3'). The expected 565 bp DNA fragment was amplified from all tested samples. DNA amplicons were cloned, sequenced and submitted to GenBank under accession Nos. MG686616 and MG686617 for eggplant and pepper isolates, respectively. BLAST analysis of eggplant and pepper isolates showed highest identity (98%) at the nucleotide level with the corresponding sequences of PVX isolates infecting potato in India (KR605392) and Pakistan (KC757709). To the best of our knowledge, this is a first report of PVX in eggplant and pepper plants in Iran.

References

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