



First report of pea enation mosaic virus 1 infecting *Lathyrus ochrus* (L.) DC and *L. cicera* L. in Greece

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In April 2013, about 20% of *Lathyrus ochrus* (Cyprus-vetch) plants (Fabaceae), in experimental plots in the farms of Agricultural University of Athens, in Kopaida (Voitia) and in Athens exhibited severe stunting, leaf malformation and mottling symptoms. In April 2020, similar symptoms were observed in field trials of *L. ochrus* and *L. cicera* (red-pea) in the farm of Aristotle University of Thessaloniki. *Lathyrus cicera* is grown as feed (hay and seed), while *L. ochrus* is used as a grain legume and/or the leaves are used as an edible salad in insular Greece. Leaf samples from symptomatic plants of both species and areas tested positive in ELISA (DSMZ antibodies, Germany) for pea enation mosaic virus (PEMV) that represents a symbiotic association of PEMV-1 (*Enamovirus*, *Luteoviridae*) and PEMV-2 (*Umbravirus*, *Tombusviridae*) (DSMZ, AS-0017), but negative for alfalfa mosaic virus (*Alfamovirus*, *Bromoviridae*), bean yellow mosaic virus and pea seed-borne mosaic virus (*Potyvirus*, *Potyviridae*), bean leafroll virus (*Luteovirus*, *Luteoviridae*), broad bean wilt virus (*Comovirus*, *Secoviridae*), cucumber mosaic virus (*Cucumovirus*, *Bromoviridae*), and faba bean necrotic yellows virus (*Nanovirus*, *Nanoviridae*). The presence of PEMV-1 was verified by RT-PCR using primers targeting an internal region of the capsid subunit that is essential for aphid transmission [capsid protein read-through

(CP_RTD) protein] (Chatzivassiliou et al. 2016). Primer set PEMV-CP-RTD_F (5'-CCTCCGATTGCCAGTGTATAA-3') and PEMV-CP-RTD_R (5'-TTCTCGGTATATCCACCA TAGGA-3') amplified a ~ 1000 bp fragment that was subsequently sequenced. Phylogenetic analysis showed that the sequence of five PEMV-1 isolates determined in this study (GenBank accession numbers MW589453-MW589455 for *L. ochrus* and MW589456-MW589457 for *L. cicera*) showed 89.28%-97.92% similarity. These isolates showed higher similarity (98.96%) with a pea isolate from Germany (MN497817). This is the first report of a PEMV infection in *L. ochrus* and *L. cicera*.

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Data availability All data generated or analysed during this study are included in this published article [and its supplementary information files].

Declarations

Conflict of interest The authors declare that there is no conflict of interest.

Reference

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