New Disease Reports

First report of *Cucurbit aphid-borne yellows virus* in *Vicia faba*

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There are 17 formally recognised virus species in the genus *Polerovirus* (family *Luteoviridae*) according to the ICTV classification released in 2014. Three polerovirus species have been described that affect production in economically important cucurbit crops: *Cucurbit aphid-borne yellows virus* (CABYV), *Melon aphid-borne yellows virus* (MABYV) and *Suakwa aphid-borne yellows virus* (SABYV). Two other poleroviruses, *Beet western yellows virus* (BWYV) and *Pepper vein yellows virus* (PVYV) have been detected recently in field-grown pepper plants in Turkey (Buzkan *et al*., 2013). During surveys in March 2016, symptoms including chlorosis of young leaves and yellowing of older leaves, suggestive of polerovirus infection, were observed in broad bean (*Vicia faba*) plants (Fig. 1) in Tarsus, a province in the Mediterranean region of Turkey.

A total of 36 diseased plants were tested for the presence of poleroviruses using DAS-ELISA (Dombrovsky *et al*., 2010) and 26 tested positive. A 1.1 kb portion of the polerovirus genome was amplified from all 26 ELISA-positive samples using the general polerovirus primer pair Pol-G-F and Pol-G-R in RT-PCR (Knierim *et al*., 2010). PCR amplicons were subsequently sequenced (GenBank Accession No. KY112798) and subject to a BLASTn search to identify the polerovirus species. According to an alignment of 473 nucleotides of the RdRp, the broad bean isolate showed 98% nucleotide identity with a CABYV isolate from cucumber from Iran (KF425567). To the best of our knowledge this is the first report of CABYV in *V. faba* in Turkey and globally. CABYV has been reported previously in a range of cucurbit crops in Turkey using DAS-ELISA (Yardımcı & Özgönen, 2007). However, the virus species was not confirmed since the CABYV polyclonal antibody used cross-reacts with other poleroviruses (Dombrovsky *et al*., 2010).

Since CABYV was first identified in 1992, the virus has been detected worldwide in temperate and subtropical areas (Lecoq *et al*., 1992). Apart from cucurbit crops, other species of agronomic importance that are CABYV hosts include *Beta vulgaris* and *Lactuca sativa*, as well as common weed species such as *Capsella bursa-pastoris*, *Papaver rhoeas* and *Senecio vulgaris* which are thought to be virus reservoirs (Knierim *et al*., 2010; Mnari-Hattab *et al*., 2009). CABYV is a phloem-limited virus that is transmitted in a persistent, non-propagative mode by aphids, including *Aphis gossypii* and *Myzus persicae* (Lecoq *et al*., 1992). Mixed polerovirus infections increase the risk of the emergence of recombinant viruses. Poleroviruses must be considered as important emerging pathogens in open-field and greenhouse vegetable cultivation.

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Figure 1

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