First Report of Infection of *Fallopia multiflora* with cucumber mosaic virus and zucchini yellow mosaic virus

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Fallopia multiflora (Thunb.) Haraldson (syn. *Polygonum multiflorum* Thunb., family *Polygonaceae*) has been commercially cultivated as a medicinal plant in Korea. There have been no previous reports of viruses infecting *F. multiflora*. During a survey in August 2017, *F. multiflora* plants with typical viral symptoms, including foliage discoloration, mosaic and mottle, were observed in a farm in Samchuck, Korea. Cucumber displaying similar disease symptoms were observed in a nearby field. To confirm the presence of viral infection, five symptomatic leaves from the different *F. multiflora* and cucumber plants were analyzed by DAS-ELISA using specific antibodies to cucumber mosaic virus (CMV), zucchini yellow mosaic virus (ZYMV), cucumber green mosaic mottle virus (CGMMV), and watermelon mosaic virus (WMV).

CMV, ZYMV, CGMMV and WMV infections were detected in cucumber plants. CMV and ZYMV infections were detected in *F. multiflora*. A mixed infection on *F. multiflora* was subsequently confirmed by RT-PCR using CMV-specific primers designed from a highly conserved region of the coat protein (CP) gene (5'-YASYTTTDRGGTTCAATTCC-3' and 5'-GACTGACCATTTTAGCCG-3') and ZYMV-specific primers derived from the CP gene (5'-YGACAAAGGGAAAAACAAGGATG-3' and 5'-CGGCAGCGAAACGATAACC-3') (Cho et al. 2011). DNA fragments of expected sizes (928 and 698 bp, respectively) were amplified, and then cloned and sequenced. BLAST analysis of one CMV sequence (GenBank accession No. MG020558) showed 98% identity with a CMV sequence from South Korea (AB369273), and that of a ZYMV sequence (MG020559) showed 82% identity with a ZYMV sequence from China (KX421104). To our knowledge, this is the first report of CMV and ZYMV on a new host *F. multiflora* in Korea, and possibly in the world.

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Reference

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