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DISEASE NOTE

First report of plantago asiatica mosaic virus infecting scarlet geranium (*Pelargonium inquinans*) worldwide

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Scarlet geranium (*Pelargonium inquinans*, family Geraniaceae) is a perennial ornamental plant, native to South Africa and used as a potted plant in gardens worldwide (Tembeni et al. 2019). In May 2021, ten scarlet geranium plants showing virus-like symptoms, including chlorotic and necrotic lesions, and mosaic on the leaves, were collected at the Sunchenman National Garden in Suncheon, South Korea. The ten symptomatic samples were tested for major viruses known to infect *Lilium* spp. in Korea, including cucumber mosaic virus, lily symptomless virus, lily mottle virus, and plantago asiatica mosaic virus (PlAMV) using polyclonal antibodies (Agdia, Elkhart, IN, USA) because these plants were grown in close association with lily plants. All samples were positive for PlAMV, and negative for other viruses infecting lilies. Total RNA was extracted from all ten ELISA-positive samples using a Clear-S Total RNA extraction kit (InVirusTech, Gwangju, Korea). RT-PCR was performed using previously reported diagnostic primers for PlAMV (Lim et al. 2021), and amplified a product of the expected size (432 bp) from all ten symptomatic samples. Two amplicons were purified, cloned into the pGEM-T EASY Vector (Promega, Madison, WI, USA), and sequenced in both directions. A single representative sequence was deposited in GenBank (LC667834) as the sequences obtained from two amplicons were identical. BLASTn analysis revealed that the new PlAMV isolate, designated GSC, shared over 99% nucleotide sequence identity with isolates from lily cultivars from different countries. Healthy *P. inquinans* plants and *Nicotiana benthamaina* plants were mechanically inoculated with PlAMV-infected *P. inquinans*, and these plants showed severe necrosis and mild mosaic symptoms at 14 days post-inoculation, respectively. PlAMV infection in these plants was confirmed by RT-PCR using the same primers. This is the first report of PlAMV infecting *P. inquinans* worldwide. Further studies are required to determine the occurrence of PlAMV and prepare management strategies.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

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