

NEW DISEASE REPORT

First report of Konjac mosaic virus in *Zantedeschia aethiopica* from the United Kingdom

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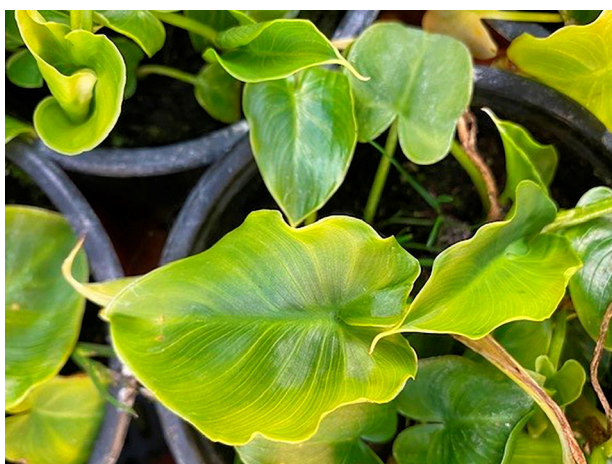


FIGURE 1 Symptoms on *Zantedeschia aethiopica* observed in the nursery in Hampshire

In June 2019 a sample of lily (*Zantedeschia aethiopica*) was submitted to Fera Science Ltd from a horticultural retail nursery in Hampshire, England. The sample was sent in following a routine inspection, where the appearance of an unknown disease was discovered. Symptoms manifested as yellow streaks on the leaves (Figs 1–3). In a batch of 60,000 plants, approximately 50% showed symptoms.



FIGURE 2 Top side of a detached leaf submitted by the inspector for testing

The sample was tested by ELISA for a broad spectrum of potyviruses along with *Tomato spotted wilt virus* (both DSMZ, Germany). *Cucumber mosaic virus* (Agdia, USA) and *Impatiens necrotic spot virus* (Bioreba, Switzerland) according to the manufacturer's instructions. The sample tested positive for the presence of a potyvirus but negative for the other viruses. To confirm the diagnosis and identify the potyvirus, the sample was tested by conventional PCR using primers to detect a broad range of potyviruses (van der Vlugt *et al.*, 1999). A product of the expected size (c. 650 bp) was obtained and sent for Sanger sequencing (Eurofins, Germany). A Blastn nucleotide sequence comparison showed a 97.98% match with the polyprotein precursor of *Zantedeschia*

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FIGURE 3 Underside of a detached leaf submitted by the inspector for testing

mosaic virus (GenBank Accession No. AF332872.1) and a 97.78% match with *Konjac mosaic virus* (KoMV) coat protein (LC114491.1) confirming the virus to be an isolate of KoMV (Adams & Valkonen, 2007). The sequence has been deposited in GenBank (ON324829)

Following notification to the inspector, the grower was informed and took the infected batch of plants off sale. The infection source is unclear as the propagation material had been in the UK nursery for at least 25 years. KoMV is known to be transmitted by aphids (Liao *et al.*, 2020) so aphid transmission from other local plants is possible. Alternatively, low levels of the virus may have been present in the parent material, having built up over years of continuous propagation. KoMV isolates in *Zantedeschia* are reported to be a significant problem in Taiwan, ever since the plant was introduced in the 1990's from New Zealand and the Netherlands, suggesting the virus has been present within commercial *Zantedeschia* for many years (Liao *et al.*, 2020). This finding suggests that KoMV is more widely distributed than currently reported. Species of *Zantedeschia* such as *Z. aethiopica* are widely grown for the ornamental and fresh cut flower markets. KoMV could have a significant impact on sales of this popular ornamental by reducing the growth and quality of plants.

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