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DISEASE NOTE

The first report of grapevine yellow speckle viroid 2 in Korea

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While grape productivity and quality are affected by several grapevine viruses which are widespread in Korean vineyards (Kim et al. 2021), there is no information on the occurrence of grapevine viroids in Korea. It is assumed that the incidence of viroids could be high since hop stunt viroid and grapevine yellow speckle viroid 1 infection, which are widespread in the world, have also been reported in Korea. However, there is no report of grapevine yellow speckle viroid 2 (GYSVd-2) infection from Korea. In October 2020, nine grapevine samples of cv. Shine Muscat showing unusual symptoms of leaf chlorosis, necrotic spots, or leaf distortion were collected from nine different vineyards in Gangneung, Korea. The presence of GYSVd-2 was screened by reverse transcription polymerase chain reaction (RT-PCR). A first PCR test was carried out with primer pair GYSVd-2 up (5′-GACCTG CAGAGAAAAGAAGAAGG-3′)/GYSVd-2 do (5′- GCT CGACTAGCGGAGGC-3') (Sassalou et al. 2020). One of the nine samples tested positive for GYSVd-2. To further confirm GYSVd-2 infection, the same sample was tested with another viroid-specific RT-PCR using primer pair GYSVd-2-P1 (5'- ACTAGTACTTTCTTCTATCTCCGAAGC-3') and GYSVd-2-P2 (5'- ACTAGTCCGAGGACCTTTTCTAGC GCTC-3') (Jiang et al. 2009). A PCR amplicon was also obtained, and Sanger sequencing was performed (Macrogen, Korea). The obtained sequence was deposited in GenBank under accession number OL634848, and was compared with the available GYSVd-2 sequences from the GenBank using NCBI BLAST. The 361-bp amplified genome of the Korean isolate revealed the highest identity (99.7%) with a GYSVd-2 isolate from Iran (JQ686718.1). GYSVd-2 has been identified not only Australia, China and Greece but also in other grapevine-producing countries including India, Italy, Thailand, USA, Iran and Turkey. Major symptoms described in the literature are yellow speckle and yellow spots on the leaf surface, which match those observed in Korea. To the best of our knowledge, this is the first GYSVd-2 infection reported in Korea, expanding our knowledge on its worldwide distribution.

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Declarations

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

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