First report of grapevine yellow speckle viroid 1 infecting grapevine (*Vitis vinifera* L.) in Morocco

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During July 2019, seven grapevines (*Vitis vinifera* L.) of cultivar Muscat exhibited shortened internodes with tiny yellow leaves in a commercial vineyard in Meknès region, central part of Morocco. Leaf samples were collected from the seven symptomatic and other four symptomless vines, and total RNA was extracted using an RNeasy Plant Mini Kit (Qiagen, Germany). The presence of grapevine yellow speckle viroid 1 (GYSVd-1) was tested by reverse transcription (RT)-PCR with primer pair PBCVd100C/194H (Nakaune and Nakano 2006) for the amplification of a 220-bp region of the genome. All the symptomatic and two asymptomatic vines tested positive for GYSVd-1, hence, the symptoms observed in the vineyard cannot be attributed to GYSVd-1. PCR products were purified using a DNA extraction kit (Fermentas, Lithuania) and sequenced in both directions. Nucleotide blast analysis confirmed the presence of GYSVd-1. To further verify these results, the full-length genome of three Moroccan GYSVd-1 isolates was amplified by RT-PCR using primers 5'-TGTGGTTCCTGTGGTTTCAC-3' and 5'-ACCACAAGCAAGAAGATCCG-3' (Ward et al. 2011) and the amplicons were sequenced in both directions.

The three new GYSVd-1 sequences were 99.18–99.91% identical and were deposited in GenBank under accession numbers MH414919, MH414920 and MH414921. BLASTN analysis indicated 99% sequence identity with the Spanish isolate E27-YS1 (KJ466324). To our knowledge, this is the first report of GYSVd-1 presence in Morocco. More work is needed to study the distribution and the potential effect of this viroid in grapevines grown in Morocco.

References

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