First report of Cucumber mosaic virus infecting watermelon in Greece and Bulgaria

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Disease Note

FIRST REPORT OF *CUCUMBER MOSAIC VIRUS* INFECTING WATERMELON IN GREECE AND BULGARIA

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In 2014, a total of 108 symptomatic watermelon samples were collected in Greece and analyzed by DAS-ELISA using polyclonal antisera (INRA, Montfavet) against the most common aphid-transmitted viruses. *Cucumber mosaic virus* (CMV) was detected in eight of 108 plants tested. Five of these plants collected at Lesvos were also infected with *Watermelon mosaic virus* (WMV), whereas three plants from Prohoma had single infections. Five samples with severe stunting and yellowing collected at Asenovgrad (Bulgaria) in 2013 and tested by DAS-ELISA for the above viruses hosted CMV and *Cucurbit aphid-borne yellows virus* (CABYV). To confirm CMV presence in watermelon, a nested RT-PCR assay was carried out first with the degenerated primers CMVup624a (5'-ATGGACAAATCTGRATC-3') and CMVdo1244a (5'-TGRTGCTCRAYGTCKACATGA-3') followed by CMVup624b (5'-GGACAAATCTGRATCTCCCAATGC-3') and CMVdo1244b (5'-TGCTCRAYGTCRACATGAAG-3') that amplify a 622 bp region from the viral coat protein gene. Total RNA (Chatzinasiou *et al*., 2010, method A) extracted from all ELISA- positive watermelon samples from both countries and from two healthy watermelon plants was used as template in nested RT-PCR. A product of the expected size was amplified from all serologically CMV-positive samples, but not from the healthy ones. The Greek CMV isolates from Lesvos (LN810059) and Prohoma (LN810060) showed 99% nucleotide sequence identity with potato (AB448694) and tomato (EF153734) CMV isolates from Syria and India, while the Bulgarian isolate (LN810058) showed 99% nucleotide sequence identity with an Indian cucumber isolate (JF279608). Phylogenetic analysis indicated that the Greek CMV isolate (LN810059) belongs to sub-group IA, while the Bulgarian isolate and a Greek isolate (LN810060) belong to sub-group IB. To our knowledge this is the first report of CMV infecting watermelons in Greece and Bulgaria.

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Disease Note

FIRST REPORT OF *ZANTEDESCHIA MILD MOSAIC VIRUS* ON *ZANTEDESCHIA AETHIOPICA* IN ITALY

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Calla lily [*Zantedeschia aethiopica* (L.) Spreng] has become one of the most popular cut flowers worldwide. It has been reported as the natural host of various plant viruses, including potyviruses such as *Bean yellow mosaic virus* (BYMV), *Dasheen mosaic virus* (DsMV), *Turnip mosaic virus* (TuMV) and *Zantedeschia mosaic virus* (ZaMV). In 2005 a new potyvirus named *Zantedeschia mild mosaic virus* (ZaMMV) was identified in Taiwan (Huang and Chang, 2005). In 2012, 15 plants of Calla lily cultivated in Tuscan farms showed leaves with yellow spots and stripes, green islands and an unusual mild mosaic. Seventeen samples (15 symptomatic and two symptomless) were collected and assayed by ELISA for BYMV, DsMV, TuMV, ZaMV and potyviruses using antisera produced by DSMZ (Braunschweig, Germany) and LOEWE Biochemica (Sauerlach, Germany). Plants were positive for an anti-potyvirus group monoclonal antibody. Positive samples were assayed by reverse transcription-polymerase chain reaction for ZaMMV using total RNA extracted from leaves and specific primers for the coat protein gene (Wen-Chi *et al*., 2010). Amplicons of the expected size (792 bp) were obtained for 15 samples that reacted positively to the potyvirus antibodies, while no amplification was observed in symptomless samples. The sequence obtained from one ZaMMV amplicon (accession No. KF156666) had 99% nucleotide identity with the corresponding fragment of a reference ZaMMV isolate (GenBank accession No. AY626825.4). To our knowledge this is the first report of ZaMMV on *Zantedeschia aethiopica* in Italy.

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