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DISEASE NOTE

First detection of tomato leaf curl New Delhi virus in melon and zucchini squash in southern Italy

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In September 2017, severe symptoms and heavy infestations of aleyrodids were reported on cucurbit crops grown in open fields at the border between Apulia and Basilicata regions (southern Italy). In zucchini squash symptoms consisted in severe curling and brittle fracture of the leaves. Melon plants showed bright yellow mosaic on leaves and necrotic streaks along the stems, flower stalks and fruits whereas squash plants displayed severe yellow mosaic and leaf blade deformation. Disease incidence in the three crops was close to 100%. Symptoms resembled those described recently for infections of tomato leaf curl New Delhi virus (ToLCNDV) (Panno et al., 2016) and watermelon mosaic virus (WMV) (Finetti-Sialer et al., 2012). DNA and RNA preparations from two plants for each species were tested by PCR, respectively, with primers For-5'CCCTTGTAAAGTGCAGTCCT3' and Rev-5'GGATTTGATGCGTGAGTACA3' for the AV1 gene of ToLCNDV DNA-A and with primers For-5'AAACTGGG CAGGGTAGCA3' and Rev-5'TAACCTGCTGTTAA YCCCGCG3' for the WMV coat protein gene. Samples of melon and zucchini proved positive for ToLCNDV whereas WMV was detected in squash. No amplification products were obtained with primers for squash leaf curl virus, watermelon chlorotic spot virus, cucumber mosaic virus, cucumber vein yellowing virus and zucchini yellow mosaic virus. Amplicon identities were confirmed by sequencing. Those from zucchini and melon showed 100% identity with ToLCNDV from Spain (KF749224) and Sicily (KU145141) whereas those from squash were 99% and 94% identical to WMV from Belgium (KP980663) and Italy (FJ8231229), respectively. The sequence of a 507 bp fragment of ToLCNDV was deposited in GenBank under the accession number MG269826. This is the first report of ToLCNDV in melon and in the continental part of the Country.

References

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