



First report of turnip mosaic virus naturally infecting lettuce and chard plants in Brazil

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Turnip mosaic virus (TuMV) (*Potyvirus* genus) is a virus that infects at least 418 host species of cultivated and wild plants (Gibbs et al. 2015). During the spring of 2017, symptoms of mosaic were observed in lettuce (*Lactuca sativa*) and chard (*Beta vulgaris* subsp. *vulgaris*) fields, in Sao Paulo State (Brazil). Initially, the symptomatic leaves were submitted to an indirect ELISA test, using a polyclonal potyvirus antiserum (Agdia, Inc) and from 20 lettuce and 13 chard plants tested, 11 and 8 plants were found positive, respectively. Total RNA was extracted (Total RNA Purification Kit, Norgen), followed by RT-PCR using the universal primers W-CIEN (5'-ATGG TTTGGTGYATYGARAAT-3') and PV-1 (5'-GATT TAGGTGACACTATAGT₍₁₇₎-3') (Gibbs and Mackenzie 1997) that amplify part of the potyvirus capsid protein (CP) gene. The amplicons obtained (~850 bp) from lettuce and chard plants were sequenced and nucleotide identity of 96% was observed with TuMV (GenBank accession No. AB701725). The complete sequence of the coat protein gene (1109 bp) was amplified using specific primers (TuMV 8698 Fwd: 5'-TACCTACAAGCAATCTTTG-3' and TuMV 9807 Rev: 5'-GGCAATCGAGATACTATCTC-3'). The amplicons were purified and directly sequenced, confirming the presence of TuMV naturally infecting lettuce and chard plants. The sequences obtained from lettuce (MH458437) and chard (MH458436) were compared and aligned with a dataset of 29 TuMV sequences from GenBank followed by Bayesian

phylogenetic analysis and both clustered in the *Brassica-Raphanus*-[BR] clade. The TuMV isolate from lettuce and chard was successfully sap-transmitted to *Raphanus sativus* and *Eruca sativa* (Brassicaceae), inducing mosaic symptoms in both and infection was confirmed by RT-PCR. A basal-BR TuMV naturally infecting *Eruca sativa* (rocket salad) and *Raphanus raphanistrum* (raphanus) was also recently described in Brazil (Ribeiro-Junior et al. 2017) and this paper reinforces that TuMV is becoming frequent on vegetable leaves in Brazil.

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