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DISEASE NOTE

First report of Hibiscus soymovirus and hop stunt viroid in *Hibiscus rosa-sinensis* in Brazil

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During a routine inspection of ornamental plants in residential gardens in Recife (Pernambuco; Brazil) in August 2022, an hibiscus specimen showing leaf chlorotic spots and mosaic patterns was observed (Online resource 1). Since a former report of Hibiscus soymovirus (HSV) in hibiscus showing comparable symptoms (Roy et al. 2024), polymerase chain reactions (PCRs; Online resource 2) were conducted on two DNA leaf extracts. Bidirectional Sanger sequencing followed by BLASTn alignment assigned the sequences to HSV (best hit: OR621031; 98.7% nt identity). The complete HSV genome sequence was obtained by Illumina high-throughput sequencing (Online resource 2), and consisted of 8,174 bp (HSV_Rec; PV793779), with highest nt identity (97.4%; 100% coverage) to a HSV isolate from Colombia (OR621030). Nucleotide identities with other three HSV sequences from Colombia were in the range 94.92%-96.98%, and lowest identity (94.29%) was with an isolate from Hawaii (OP757659). Reverse transcription-PCRs (Online resource 3) on a DNase-treated RNA extract revealed occurrence of cognate RNA transcripts. Further, a metagenomic analysis on the same RNA extract allowed reconstruction of the genome sequence (PV793780) of a hop stunt viroid (HSVd) isolate, showing highest identity (97.99%) to a sequence from Spain (AJ297838), and confirmed by RT-PCR (Astruc et al. 1996). Screening of hibiscus plants from nurseries, residential gardens or University campuses in Recife, revealed amplification of HSV DNA, whereas the viroid finding remained unique to the original plant (Online resource 4). This study represents the second record of HSV in South America, and the first identification of HSVd in hibiscus in Brazil, expanding on previous reports in other plants (Online resource 5). Symptom expression was transient under glasshouse conditions, suggesting that asymptomatic hibiscus plants may act as reservoir for HSV and HSVd. In this context, further investigations will be needed to evaluate the potential risk eventually posed to other crops.

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Data availability The datasets generated and analysed during the current study are available from Leibniz Institute DSMZ (Braunschweig, Germany) upon reasonable request.

Declarations

Research involving human participants and/or animals No humans or animals were used in this study.

Informed consent Not applicable.

Content The content of this publication is sole responsibility of the authors.

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Conflict of interest The authors have no competing interests to declare that are relevant to the content of this article.

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