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Disease Notes

First Report of *Tomato severe rugose virus* in Chili Pepper in Brazil

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Three definitive and three tentative begomovirus species have been reported in tomato fields in Brazil according to a recent review (1). Extensive surveys have been conducted since the 1990s in solanaceous weeds and other crops planted close to tomato fields, but no tomato-infecting geminiviruses have been reported on those crops. During November 2003, leaves of one chili pepper plant "dedo-de-moça" (*Capsicum baccatum* var. *pendulum*) showing symptoms of yellow mosaic and leaf distortion were collected in Petrolina de Goiás (Goiás State). Serological analyses were carried out with polyclonal antisera produced in our laboratory against the following viruses: *Potato virus Y* (PVY), *Pepper yellow mosaic virus* (PepYMV), *Tomato spotted wilt virus* (TSWV), *Tomato chlorotic spot virus* (TCSV), *Groundnut ringspot virus* (GRSV), and *Chrysanthemum stem necrosis virus* (CSNV). Serological data showed that the plant was not infected with any of these viruses. A begomovirus-specific DNA-A fragment of 1.3 kb was amplified by polymerase chain reaction (PCR) from the analyzed plant. The fragment shared 98% identity to the partial coat protein coding region (CP), 94% to the intergenic region (IR), and 95% to the partial AC1 coding region of *Tomato severe rugose virus* (ToSRV) (GenBank Accession No. AY029750). Total DNA from the original infected plant was used to biolistically inoculate healthy plants of *C. annuum* and *C. baccatum* var. *pendulum*. Four resulting symptomatic plants, two from *C. annuum* and two from *C. baccatum*, were tested using PCR for begomovirus, and the nucleotide sequence of the amplified fragment confirmed they were infected with ToSRV. Whitefly inoculation of *C. annuum*, *C. baccatum*, and tomato was also performed, and all plants expressing symptoms were confirmed to be infected with ToSRV by sequencing a begomovirus-specific amplified fragment. Cloning of the complete DNA-A was achieved by using TempliPhi (Amersham Biosciences, Piscataway, NJ) amplification and digestion with a single cutting restriction endonuclease (2). Sequencing of several clones showed that the complete DNA-A (GenBank Accession No. DQ207749) was 97% identical to ToSRV, confirming the results of the previous PCR analysis. The deduced amino acid sequences showed identities of 97% to the CP, 95% to AC1, 96% to AC2, 96% to AC3, and 88% to AC4 of ToSRV. Although begomoviruses have not yet been causing any significant losses in chili pepper in Brazil, they may be of potential importance. Moreover, chili pepper, a plant commonly found in gardens throughout the country, may serve as an

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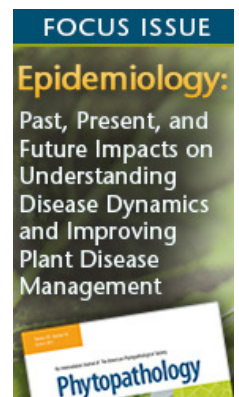
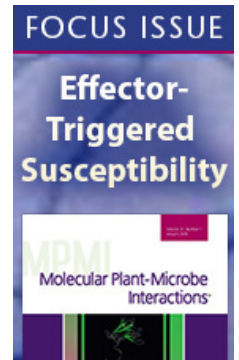
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alternate host in tomato-producing areas. To our knowledge, this is the first report of a begomovirus infecting chili pepper in Brazil.

References: (1) C. M. Fauquet et al. Arch. Virol. 148:405, 2003. (2). A. K. Inoue-Nagata et al. J Virol Methods 116:209, 2004.

Cited by

Identification of Capsicum accessions tolerant to Tomato severe rugose virus and resistant to Bemisia tabaci Middle East-Asia Minor 1 (MEAM1)

Kessia F. C. Pantoja, Kelly C. G. Rocha, Arlete M. T. Melo, Júlio M. Marubayashi, Edson L. L. Baldin, João P. F. Bentivenha, Ricardo Gioria, Rômulo F. Kobori, Marcelo A. Pavan, and Renate Krause-Sakate

Tropical Plant Pathology Apr 2018, Volume 43, Number 2, 138-145

[Crossref](#)

A review of geminivirus diseases in vegetables and other crops in Brazil: current status and approaches for management

Alice K Inoue-Nagata, Mirtes F Lima, and Robert L Gilbertson

Horticultura Brasileira Mar 2016, Volume 34, Number 1, 8-18

[Crossref](#)

Temporal Dynamics of Tomato Severe Rugose Virus and Bemisia tabaci in Tomato Fields in São Paulo, Brazil

Júlio C. Barbosa, Jorge A. M. Rezende, Lilian Amorim, and Armando Bergamin Filho

Journal of Phytopathology Jan 2016, Volume 164, Number 1, 1-10

[Crossref](#)

Synonymous site variation due to recombination explains higher genetic variability in begomovirus populations infecting non-cultivated hosts

A. T. M. Lima, R. R. Sobrinho, J. Gonzalez-Aguilera, C. S. Rocha, S. J. C. Silva, C. A. D. Xavier, F. N. Silva, S. Duffy, and F. M. Zerbini

Journal of General Virology Feb 2013, Volume 94, Number Pt_2, 418-431

[Crossref](#)

Further evidence reveals that okra mottle virus arose from a double recombination event

Leonardo C. Albuquerque, Silvia A. Aranha, Fernanda R. Fernandes, and Alice K. Inoue-Nagata

Archives of Virology Sep 2012

[Crossref](#)

Avaliação de danos causados pelo Tomato severe rugose virus (ToSRV) em cultivares de pimentão

Kelly Cristina Rocha, Renate Krause Sakate, Marcelo Agenor Pavan, Rômulo Fugito Kobori, Ricardo Gioria, and Valdir Atsushi Yuki

Summa Phytopathologica Mar 2012, Volume 38, Number 1, 87-89

[Crossref](#)

Molecular and biological characterization of a new Brazilian begomovirus, euphorbia yellow mosaic virus (EuYMV), infecting Euphorbia heterophylla plants

Fernanda R. Fernandes, Leonardo C. Albuquerque, Cristiane L. Oliveira, Andréa R. R. Cruz, Wesley B. Rocha, Talita G. Pereira, Fernanda Y. B. Naito, Natália de M. Dias, Tatsuya Nagata, Josias C. Faria, Francisco M. Zerbini, Francisco J. L. Aragão, and Alice K. Inoue-Nagata

Archives of Virology Jul 2011

[Crossref](#)

Natural infection of Nicandra physaloides by Tomato severe rugose virus in Brazil

Julio C. Barbosa, Sarah S. Barreto, Alice K. Inoue-Nagata, Marcelo S. Reis, Ana Carolina Firmino, Armando Bergamin Filho, and Jorge Alberto Marques Rezende

Journal of General Plant Pathology Dec 2009, Volume 75, Number 6, 440-443

[Crossref](#)

Diversity and prevalence of Brazilian bipartite begomovirus species associated to tomatoes

Fernanda Rausch Fernandes, Leonardo Cunha Albuquerque, Leonardo Britto Giordano, Leonardo Silva Boiteux, Antonio Carlos Ávila, and Alice Kazuko Inoue-Nagata

Virus Genes Feb 2008, Volume 36, Number 1, 251-258

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