

Biosafety Clearing-House (BCH)

ORGANISM (ORGA)

BCH-ORGA-SCBD-104819-3

LAST UPDATED: 30 JUN 2020

Organism information

Scientific name

Tobacco mosaic virus

Taxonomic Classification

Kingdom Orthornavirae
Phylum Kitrinoviricota
Class Alsuviricetes
Order Martellivirales
Family Virgaviridae
Genus Tobamovirus
Species Tobacco mosaic virus

Common name(s)

TMV

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Additional classification

Group (virus)

IV ((+)ssRNA)

Type of organism

Viruses

Characteristics related to biosafety

Known pathogenicity and/or allergenicity

TMV has a very wide host range and has different effects depending on the host being infected. It is known to infect members of nine plant families, and at least 125 individual species, including tobacco, tomato, pepper (all members of the useful Solanaceae), cucumbers, and a number of ornamental flowers.

The first symptom of this virus disease is a light green coloration between the veins of young leaves. This is followed quickly by the development of a "mosaic" or mottled pattern of light and dark green areas in the leaves. Rugosity may also be seen where the infected plant leaves display small localized random wrinkles. These symptoms develop quickly and are

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more pronounced on younger leaves.

Mosaic does not result in plant death, but if infection occurs early in the season, plants are stunted. Lower leaves are subjected to "mosaic burn" especially during periods of hot and dry weather. In these cases, large dead areas develop in the leaves. This constitutes one of the most destructive phases of tobacco mosaic virus infection. Infected leaves may be crinkled, puckered, or elongated. However, if TMV infects crops like grape and apple, it is almost symptomless.

Additional Information

Other relevant website addresses and/or attached documents

- ? [Proof by synthesis of Tobacco mosaic virus.pdf](#) (*English*)
- ? [The cell biology of Tobacco mosaic virus replication and movement.pdf](#) (*English*)
- ? [University of Minnesota - Tomato mosaic virus and tobacco mosaic virus](#) (*English*)
- ? [Tobacco mosaic virus-directed reprogramming of auxin-indole acetic acid protein transcriptional responses enhances virus phloem loading.pdf](#) (*English*)

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Further Information

Questions about the Cartagena Protocol on Biosafety or the operation of the Biosafety Clearing-House may be directed to the Secretariat of the Convention on Biological Diversity.

Secretariat of the Convention on Biological Diversity

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