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Communication

Wageningen UR scientists unmask virus that threatens Spanish tomato growing

Scientists of Plant Research International, part of Wageningen UR, have identified a dangerous tomato virus. This virus causes ever increasing damage in Spanish tomato growing as cause of the Torrado (=‘roasted’) disease. The scientists recently published their findings in Archives of Virology. The identification of the virus will enable plant breeders to develop virus-resistant varieties for tomato growers facing the Torrado disease.

The virus appears to be a completely new plant virus that could not be assigned to any existing virus genus. The virus causes necrosis of the leaves and thus may result in considerable yield loss. The plants look as if they are burned, hence the name Torrado. There are recent reports of the new disease spreading further. Spanish scientists suspect that the virus is spread by white flies.

Some years ago the Wageningen scientists, in cooperation with the breeding company De Ruiters Seeds, investigated the first plant samples from the Southeast of Spain. Large numbers of filamentous virus particles were found in the diseased plants. These were particles of the already known Pepino mosaic virus. The scientists also found other, spherical, virus particles.

The use of so-called indicator plants, not susceptible to the Pepino mosaic virus but susceptible to the new virus, made it possible to separate the new virus from the Pepino mosaic virus and to propagate it for further research. The virus indeed appeared to be capable to cause the same disease symptoms in tomato plants as those observed in Spain.

The genetic material of this virus consists of two separate RNA segments. Determination of the RNA nucleotide sequence and comparison with data in world-wide databases yielded no viruses with similar sequences. The virus cannot only be considered as a new

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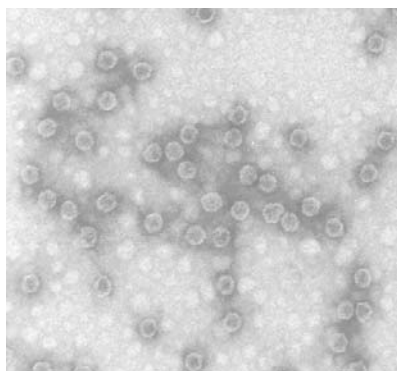
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The tomato torrado virus



Beginning symptoms

Plant Research International, Applied
Plant Research and Wageningen
University have combined forces in
the Plant Sciences Group of
Wageningen UR.

species; it is so different from known viruses that it can be said to belong to a yet unknown genus.

In their publication in Archives of Virology the authors propose to name the virus 'tomato torrado virus'.



Note for the editors:

Available illustrations: higher resolution images of

- the tomato torrado virus, seen through an electron microscope
- beginning symptoms in a leaf of a tomato plant
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PAGE
2 of 2