

BRIEF COMMUNICATION

Further Natural Host Plants of a Necrotic TMV-Strain

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Abstract. Additional three plant species were found to be natural hosts of a necrotic TMV-strain, *Silene inflata* SM., *Melandrium album* GÄRCKE and *Atriplex nitens* SCHKUHR.

Phytovirological characterization of a chosen ruderal locality in Prague-Holešovice finished about ten years ago was repeated in 1973. In the early sixties the locality was interesting by the presence of a necrotic TMV-strain in unusual hosts, cruciferous and boraginaceous weeds *Cardaria draba* DESV., *Sisymbrium loeselii* JUSL. and *Anchusa officinalis* L. (POLÁK 1964, 1965, 1966).

During our recent observations for viruses three additional symptoms carrying plant species were found: *Silene inflata* SM., *Melandrium album* GÄRCKE and *Atriplex nitens* SCHKUHR.

Studying experimental host range of TMV Holmes (1946) investigated *Silene anglica* and *Silene pendula* for susceptibility to the virus. He found "an increase of the virus locally but neither systemic spread of the virus nor production of an obvious disease". No literary data were available concerning *S. inflata* and *A. nitens* in connection with TMV infection. SCHMELZER and WOLF (1971) quoted in their list of host plants of viruses *Melandrium album* as TMV-host. •

The isolates from all three plant species were maintained in Samsun tobacco and simultaneously investigated by inoculation of 10 differential host plant species, serological ring interface test against TMV antiserum and comparison of particle morphology with standard TMV-vulgaris mounts in Tesla BS-413 electron microscope.

Symptoms in Natural Host Plants

Silene inflata — very mild chlorotic mottling (with spots of different sizes).

Melandrium album — clearing of veins in top leaves and leaf curl, sometimes mild mosaic without curl.

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Atriplex nitens — chlorosis along the main veins forming scattered bright yellow spots which tend to necrotize.

Results of Identification Experiments With Differential Hosts

Nicotiana tabacum cv. Samsun — very mild green mosaic followed by the formation of numerous necrotic spots of different sizes

Nicotiana tabacum cv. White Burley — local chlorotic lesions followed by systemic clearing of veins and formation of necrotic spots and areas

Nicotiana tabacum cv. Xanthi-nc — local necrotic lesions

Nicotiana tabacum cv. Java — local necrotic lesions

Nicotiana glutinosa — local necrotic lesions

Nicotiana sylvestris — minute local necrotic spots followed by green mosaic with necroses

Chenopodium giganteum — local chlorotic lesions

Chenopodium quinoa — local chlorotic lesions

Datura stramonium — local necrotic lesions

Solanum lycopersicum — mild green mosaic with leaf curl

Our serological tests of the three investigated and control antigens — both in crude Samsun sap and in Freon 113 clarified and concentrated samples — showed identity with TMV. Also electronmicrographs taken from shadow casted mounts revealed rod shaped particles about 300 nm long, typical for TMV (R/1: 2/5: E/E: S/*).

On the basis of our experiments it can be concluded that TMV-infection is responsible for symptoms observed in *S. inflata*, *M. album* and *A. nitens* leaves. From the systemic necrotic response of Samsun, White Burley and Java tobaccos and *N. sylvestris* it follows that the biological features of the three isolates are very similar to those of the necrotic TMV-strain isolated from cruciferous and boraginaceous weeds found at the same locality before years.

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