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BRIEF COMMUNICATION

Mild mosaic of spiraea caused by cucumber mosaic virus

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Abstract

A disease of spiraea (*Spiraea* × *vanhouttei*) manifested in leaves by very mild, mostly hardly perceptible mosaic, was found to be caused by cucumber mosaic virus (CMV) infection. The proof was given on the basis of responce of differential plants after virus transmission, by immunosorbent electron microscopy and ELISA.

Several shrubs of *Spiraea* × *vanhouttei* with symptoms of very mild mosaic in leaves (mostly hardly perceptible) were discovered in the park of the castle Sychrov in North Bohemia.

Spirea species which grow on the territory of the Czech Republic are mostly introduced plants of North American or Asiatic origin. Only few of them seem to be endemic in Central Europe or in Carpathian area. One of the most common spiraea species is *Spiraea* × *vanhouttei* (Briot) Carriere which is taken by Dostál (1989) for a horticultural hybrid (*S. cantonensis* Lour. × *S. trilobata* L.). It occurs frequently in parks, gardens and also as a wild plant in fences, as a litoral shrub *etc.*

As far as viruses in the genus *Spiraea* are concerned there is only one report by Schmelzer (1970), dealing with etiology of the yellow net disease of *S. bumalda* Burvenich from the park in Wörlitz (FRG). The disease was found to be caused by arabis mosaic virus infection. Also from closely related genera belonging to the subfamily *Spiraeoideae* there is lack of virological information besides pearl-bush, *Exochorda grandiflora* (Hook.) Lindl., which is known to be spontaneously infected with broad bean wilt virus (Schmidt 1977). Using 0.05 M HEPES buffer, pH 6.9, for homogenization of symptom-bearing *Spiraea*-leaves we transmitted the agent by mechanical way to the herbaceous test plants *Nicotiana tabacum* cv. Samsun and *Chenopodium quinoa* and following results were obtained:

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Nicotiana tabacum cv. Samsun: chlorotic local lesions or spots and rings which turn to necrotize followed by systemic mild mosaic with minute necrotic spots, recovery.
Chenopodium quinoa: local chlorotic lesions which turn to become necrotic, without systemic infection.

For maintaining the isolate and further transmission experiments firstly tobacco and later *Gomphrena globosa* were used as the most reliable hosts. The following reactions on herbaceous hosts were obtained:
Gomphrena globosa: local chlorotic lesions with red halo, mild systemic mosaic
Petunia hybrida: systemic vein-clearing
Datura stranomium: local chlorotic lesions
Nicotiana megalosiphon: local chlorotic spots
Nicotiana occidentalis: local chlorotic spots
Tetragonia expansa: local chlorotic lesions
Cucumis sativus cv. Eva: local chlorotic, later necrotic lesions, occasionally mild systemic mosaic

Electron microscopical investigation of infected herbaceous hosts showed the presence of isometrical virus-like particles with cucumovirus-like appearance. Decoration tests with cucumber mosaic virus antiserum revealed a strong positive reaction. The results from immunoelectron microscopy were confirmed by *ELISA*.

According to our knowledge *Spiraea* is a new host genus for cucumber mosaic virus.

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