

Mini data sheet on *Hosta virus X*

Added in 2013 - Deleted in 2017

Reasons for deletion:

Hosta virus X has been included in EPPO Alert List for more than 3 years and during this period no particular international action was requested by the EPPO member countries. In 2017, the Working Party on Phytosanitary Regulations agreed that it could be deleted, considering that sufficient alert has been given.

Hosta virus X (Potexvirus)

Why: *Hosta virus X (Potexvirus, HVX)* was first identified and described in Minnesota, USA in 1996. Since then, HVX has been reported from other US states, Canada, as well as from other continents. HVX is generally considered to be the most economically important virus infecting hostas. As HVX is an emerging disease that is causing problems for growers, garden centres, and gardeners, the EPPO Secretariat felt that HVX could usefully be added to the EPPO Alert List.

Where: Because HVX can be easily spread by infected planting material and is mechanically transmissible, its distribution is probably wider than which is recorded in the literature.

EPPO region: Czech Republic, Finland, France, Italy (transient, found once and all infected plants were destroyed), Netherlands, Poland.

Asia: China (Beijing), Republic of Korea.

North America: Canada (British Columbia, Québec, Ontario), USA (Connecticut, Illinois, Indiana, Iowa, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Ohio, Pennsylvania, Tennessee, Virginia, Wisconsin).

Oceania: New Zealand (North Island).

On which plants: *Hosta* spp. However, among hostas there is a great diversity of cultivars presenting different levels of susceptibility to the virus (susceptible, tolerant, or immune).

Damage: Symptoms may vary according to the type of cultivar and time of infection. Leaves infected with HVX commonly show symptoms of mosaic, mottling, interveinal chlorosis between secondary veins, deformation and desiccation. Infected plants often exhibit reduced growth and dieback. Colour-breaking can also be observed on flowers of infected plants. HVX can also remain latent in infected plants for years without showing symptoms. On susceptible cultivars, HVX produces a serious and sometimes destructive disease.

Pictures of symptoms can be viewed from the Internet:

<http://pestsurvey.wi.gov/plantdisease/pdf/ornamentals/GalleryOfPlantVirusSymptoms-2012.pdf>

<http://www.invasive.org/browse/autthumb.cfm?aut=11521>

Transmission: As HVX is sap-transmissible, it is easily transmitted during vegetative plant propagation. Hostas can also be propagated by seeds, but the possible seed transmission of HVX needs to be clarified. As is the case for other potexviruses, HVX is also spread by mechanical contact. Therefore, it is easily transmitted from plant to plant on hands and tools (e.g. pruning tools when removing old leaves or flowers). Over long distances, trade of infected plants has probably been the most significant source of the disease. In addition, it is suggested that some cultivars which have been selected and commercialized because of their 'interesting foliage' were in fact infected by HVX, which has contributed to further spreading the virus. There is no evidence that HVX might be transmitted by insects or other vectors.

Pathway: Plants for planting of *Hosta* spp. from countries where HVX occurs.

Possible risks: *Hosta* spp. are popular herbaceous perennial plants with more than 7000 varieties, and widely cultivated due to their diversity in leaf shape and colour patterns, shade tolerance and pest resistance. In the USA, it is considered that HVX has had a significant economic impact on hosta growers (but no figures could be found). As is the case for other viruses, the control of the disease is difficult and essentially based on the use of resistant cultivars and of prophylactic measures to minimize the possibility of mechanical transmission of HVX. The production of virus-free planting material through the implementation of certification schemes could also contribute to limiting the spread of HVX.

Sources

- Anonymous (2006) Fighting HVX in *Hosta*. *Naktuinbouw News* no. 7, p 3.
- Bellardi MG, Cavicchi L, Davino S (2011) First report of *Hosta virus X* infecting *Hosta* in Italy. *Journal of Plant Pathology* 93(suppl.), S4.26.
- CABI/EPPO (2012) *Hosta virus X*. Distribution Maps of Plant Diseases no. 1132. CABI, Wallingford (GB).
- Cajza M, Zielińska, L (2007) *Hosta virus X* - A new pathogen of ornamental plants in Poland. *Progress in Plant Protection* 47, 69-72.
- Choi SH, Park MH, Ryu KH (2012) Phylogeny, coat protein genetic variability, and transmission via seeds of *Hosta Virus X*. *Acta Biologica Hungarica* 63(1), 151-161 (abst.).
- Currier S, Lockhart BEL (1996) Characterization of a potexvirus infecting *Hosta* spp. *Plant Disease* 80, 1040-1043.
- De la Torre CM (2009) Molecular characterization, differential movement and construction of infectious cDNA clones of an Ohio isolate of *Hosta virus X*. Ohio, USA: Ohio State University, thesis, 93 pp.
- INTERNET
University of Arkansas System. Division of Agriculture. Research and Extension. *Hosta virus X* by S. Smith, R. Gergerich and J. Robbins.
http://www.uaex.edu/Other_Areas/publications/PDF/FSA-7548.pdf
- NPPO of Italy (2011-04).
- Tang J, Hardy C, Lebas BSM, Ward LI (2012) Presence of *Hosta virus X* in New Zealand. *Australasian Plant Disease Notes* 7, 39-40.
- Valverde RA, Sabanadzovic S, Hammond J (2012) Viruses that enhance the aesthetics of some ornamental plants: beauty or beast? *Plant Disease* 96(5), 600-611.
- Wei MS, Zhang YJ, Li GF, Ma J, Li M (2013) First report of *Hosta virus X* infecting hosta plants in China. *Plant Disease* 97(3), p 429.

EPPO RS 2013/175

Panel review date: 2017-03

Entry date 2013-08