



# First report of Cucumber mosaic virus in *Viola hederacea* in France and Italy

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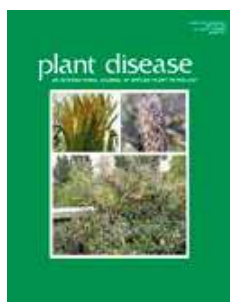
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**Disease Notes**

## First Report of *Cucumber mosaic virus* in *Viola hederacea* in France and Italy

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**O** Open Access.

*Viola hederacea* Labill. (Australian violet or trailing violet), family Violaceae, is native to eastern Australia and used for its ornamental quality in humid conditions, especially in terrariums. Mosaic and chlorotic ringspots associated with a mild crinkling on leaves of *V. hederacea* were observed in gardens in southeast France and La Mortola, Italy in 2001 and 2003, respectively. These symptoms were different from the small chlorotic spots reported in the same species in Queensland, Australia, from which a rhabdovirus was isolated (1). In samples collected from both locations, presence of *Cucumber mosaic virus* (CMV) was suspected on the basis of the symptoms exhibited by a range of inoculated plants (2) and the observation of isometric particles of approximately 30 nm with the electron microscope in sap preparations. This was confirmed by positive reactions with CMV polyclonal antiserum (3) in double-antibody sandwich-ELISA. Because of the viscosity of the *V. hederacea* extracts, 0.01% (w/v) of pectolyase in phosphate buffer was used to grind the samples and the homogenate was kept at room temperature for 2 h. In double-immunodiffusion analysis, each isolate was shown to belong to the group II of CMV. Tomato strains D and To were used as positive controls for CMV groups I and II, respectively. The virus was transmitted by aphids (*Myzus persicae*) in a nonpersistent manner from infected *Nicotiana tabacum* cv. Xanthi-nc plants to healthy Xanthi-nc plants. To determine if CMV was responsible for the symptoms observed, the French and Italian isolates were multiplied in Xanthi-nc tobacco plants after isolation from local lesions on *Vigna unguiculata* and mechanically inoculated to 10 plants of *V. hederacea*. A systemic vein clearing developed on leaves 10 days after inoculation, followed by mosaic and crinkling. CMV was detected in each plant 3 weeks after inoculation. To our knowledge, this is the first report of CMV in *V. hederacea* in France and Italy.

**References:** (1) D. H. Gowanlock and R. G. Dietzgen. Australas. Plant Pathol. 24:215, 1995. (2) L. Cardin et al. Plant Dis. 87:200, 2003. (3) J.-C. Devergne et al. Ann. Phytopathol. 10:233, 1978.

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