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## New plant disease record in New Zealand: cucumber mosaic virus in *Myosotidium hortensia* (Decne) Baill.

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Cucumber mosaic virus is recorded from *Myosotidium hortensia* growing at Lincoln, New Zealand and is the first example of virus infection in an indigenous herbaceous plant.

**Keywords** plant diseases; plant pathogens; cucumber mosaic virus; *Myosotidium hortensia*; Chatham Island forget-me-not; sap inoculation; immunodiffusion test; antisera; dieback; leaf mottle

*Myosotidium hortensia* (Decne) Baill. (Chatham Island forget-me-not) is a monotypic endemic genus growing naturally on the Chatham Islands. It is established in horticulture; Cockayne ([1923], p. 124) in his book on New Zealand plants suitable for cultivation includes it in the group "plants of special beauty of flower, fruit, or form; the élite of the Flora", yet, despite its beauty, *M. hortensia* does not appear to be widely used in horticulture.

On 8 October 1976 I noted diffuse mottle symptoms on the leaves of *M. hortensia* growing at Botany Division, DSIR, Lincoln. Adjacent plants, including a group of self-sown seedlings, appeared normal. The affected plants were less vigorous than the symptomless ones. By August 1980 mottle symptoms had developed on adjacent plants and 15 out of 18 showed symptoms. A specimen in the Botany Division Herbarium (CHR 171682) indicated that the original plant was obtained from Dr I. M. Morice, Wadestown, Wellington, and was planted at Botany Division in 1963. The incidence of the disease in *M. hortensia* growing elsewhere is unknown.

Following sap-inoculation from affected *M. hortensia* leaves, necrotic local lesions were produced on *Chenopodium amaranticolor* Coste et Reyn. and *C. quinoa* Willd.; those on the latter were larger and tended to expand, especially along the veins. Systemic chlorotic spotting and mottle were produced on *Nicotiana tabacum* L., and systemic mottle and distortion on *N. glutinosa* L.

Sap from infected *N. glutinosa* plants was concentrated about 10-fold by centrifugation and used in

immunodiffusion tests with antiserum prepared against cucumber mosaic virus from daphne; similarly treated sap from uninfected plants was used as a control. A single precipitin line occurred with concentrated sap from infected plants and antiserum.

The symptoms on indicator plants and the serological test establish the identity of the virus from *M. hortensia* as cucumber mosaic virus.

Difficulty was experienced in maintaining *M. hortensia* seedlings in the glasshouse, especially over the summer months. They tended to die back with necrosis, the cause of which is unknown but appears to be unrelated to the mosaic disease. The die back also occurred on plants grown in the field in Christchurch. In a transmission test, three *M. hortensia* seedlings were inoculated with sap from mosaic-infected *M. hortensia*, with three uninoculated controls. One inoculated plant survived and showed mosaic symptoms after 18 months and the virus was reisolated on to *C. amaranticolor*. The two surviving controls remained uninfected.

This is the first record of a disease affecting *M. hortensia* (S. R. Pennycook pers. comm.), and the first example of virus infection in a New Zealand indigenous herbaceous plant. It provides the eighth example of virus infection in our indigenous plants, the others being cucumber mosaic virus, potato virus Y, potato virus X, tobacco mosaic virus, and tomato spotted wilt virus from *Solanum laciniatum* Ait. (Thomson 1976, 1979); cucumber mosaic virus from *Corynocarpus laevigatus* J. R. et G. Forst. (Ashby 1977); and an unidentified virus from *Clematis paniculata* Gmel. (Thomson 1978). In the latter publication it was incorrectly stated that cucumber mosaic virus and tomato spotted wilt virus were recorded by Dingley (1969) from *C. afoliata* Buchan.

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