

## A New Leaf Spot Disease of the *Hebe* × *andersonii* Hybrid Caused by *Septoria veronicae* in Italy

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### ABSTRACT

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A new leaf spot disease of a *Hebe* (*Hebe* × *andersonii*) hybrid caused by *Septoria veronicae* has been observed for the first time in Italy. The circular lesions vary in color from violet (when small) to yellow-brown or gray (later when larger) with dark borders. Pathogenicity of the fungus *S. veronicae* was successfully confirmed.

*Hebe* × *andersonii* (Lindl. & Paxt.) Cockayne, a hybrid between *Hebe salicifolia* (G. Forst.) Penn. and *H. speciosa* (R. Cunn. ex A. Cunn.) Cockayne & Allen, is a suffruticose evergreen plant of ornamental value that is cultivated in the garden as a hedge or in the greenhouse as a pot plant. Its inflorescence is a raceme with blue-violet flowers at the top and white at the bottom. In autumn of 1981, *Hebe* × *andersonii* plants in pots, cultivated in a greenhouse, showed symptoms of a leaf

spot disease caused by *Septoria veronicae* Rob. ex Desm. Lesions were present on all the leaves except at the apex of the plants. The lesions were responsible for premature leaf drop.

In this paper, we give a brief description of the disease and the causal pathogen and report the results of pathogenicity tests.

### MATERIALS AND METHODS

Diagnosis of the disease was made by isolating the pathogen from affected tissues and by inoculation tests. Observations were made by using a stereomicroscope to search for sporulating structures on or in the necrotic tissues of affected foliage of hebe. Leaves were randomly picked and placed in a moist chamber at room temperature to induce sporulation. Thin sections of tissue including the

epidermis and a few deeper cells were cut and lifted off near the dark margins of the leaf spots. Minute portions of exposed spongy mesophyll tissues were then transferred to carrot agar (CA) or potato-dextrose agar (PDA) in petri dishes that were incubated in the dark at 21 C.

The pathogenicity of the isolated fungus pathogen was tested on 10 *Hebe* × *andersonii* plants growing in pots. A conidial suspension obtained from pycnidia appearing on 15-day-old colonies on CA was adjusted to  $1 \times 10^6$  conidia per milliliter. The suspension was sprayed onto the leaves of healthy hebe plants grown in the greenhouse. The inoculated plants were then placed in a moist chamber for 2 wk at 21 C under fluorescent light (22,000 lux) with a photoperiod of 12 hr. Five healthy plants treated as controls were sprayed with sterile water and incubated in the same way as the inoculated plants. The plants were examined for disease 2 mo after the inoculations.

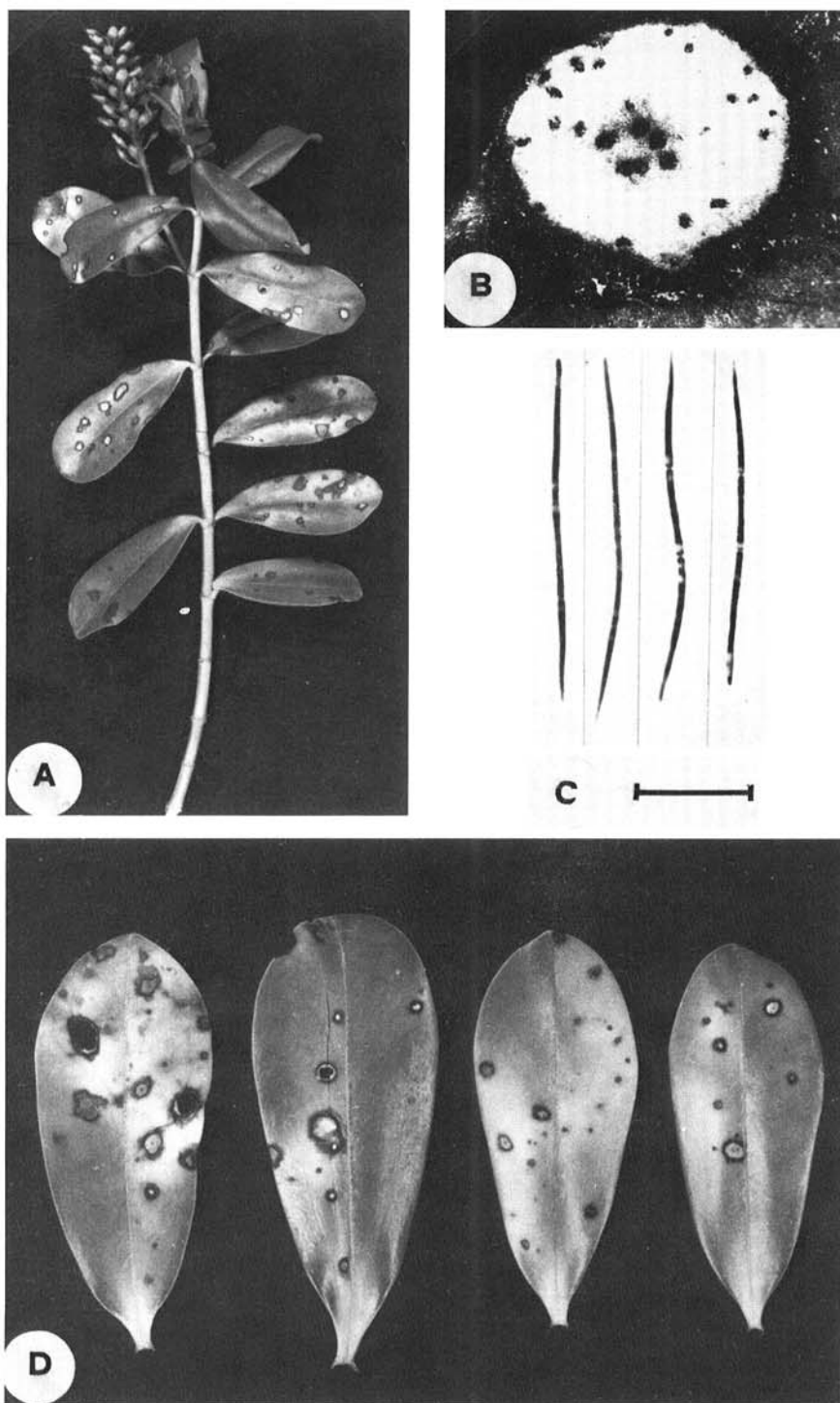
### RESULTS

**Symptoms.** The spots, barely visible to less than 5 mm, were isolated and irregularly distributed on the leaf. They sometimes coalesced into larger irregular

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**Fig. 1.** (A) Symptoms of *Septoria veronicae* on *Hebe* × *andersonii*. (B) Pycnidia of *S. veronicae* on a leaf spot (×12). (C) Conidia of *S. veronicae*. Bar represents 10 μm. (D) Artificially inoculated leaves of *Hebe* × *andersonii* 4 mo after inoculation.

spots; the infected area sometimes fragmented and shot holes appeared. The spots present on both sides of the leaf were depressed, yellow-brown or gray,

and had dark borders (Fig. 1A). In the centers of the larger spots, black pycnidia were occasionally seen (Fig. 1B). After incubation in a moist chamber, these

pycnidia discharged thin cirri containing filiform conidia: straight or flexuous, hyaline, indistinctly guttulate, faintly septate,  $25\text{--}40 \times 1\text{--}1.5 \mu\text{m}$  (Fig. 1C). Other smaller spots were violet or brown, somewhat raised, and were sometimes the first symptom expressed.

**Morphology.** Cultures obtained on PDA and CA from leaf lesions were slow-growing, initially white but becoming gray, and bearing pycnidia with conidia identical to the ones occurring on naturally infected leaves. On the basis of its morphological and biological characters, the fungus isolated was identified as *S. veronicae*.

**Pathogenicity.** Small lesions appeared on hebe leaves about 2 mo after inoculation (Fig. 1D). The lesions became more evident in the following days and appeared similar to the ones observed on naturally infected plants. *S. veronicae* was readily reisolated from such spots. All control plants remained healthy.

#### DISCUSSION

This is the first report of the *S. veronicae* on hebe in Italy. Previously, only *S. exotica* Speg. on veronica (*Veronica officinalis* L.) had been recorded from Italy (1). The differences between these two pathogens of hebe and veronica are based both on their morphological features: conidia of *S. exotica* are smaller ( $25\text{--}35 \times 2\text{--}3 \mu\text{m}$ ) and the size of the leaf spot lesions are larger. *S. exotica* causes leaf spot lesions as large as 10 mm in diameter, whereas *S. veronicae* lesions never exceed 5 mm (2). As far as we know, only *S. exotica* has been known to occur on both hebe and veronica, whereas *S. veronicae* has been reported only on veronica (3). Because hebe is closely related to veronica, however, it is likely that both *Septoria* species are present on hebe and veronica.

#### ACKNOWLEDGMENT

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