

Leaf Spot of *Ligustrum sinense* Caused by *Corynespora cassiicola* and its Control

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The authors thank M. B. Ellis, Commonwealth Mycological Institute, England, for identifying the isolates of *Corynespora cassiicola*.

Contribution No. 339, Bureau of Plant Pathology.

ABSTRACT

Corynespora cassiicola was consistently associated with a serious new disease of variegated *Ligustrum sinense*. Leaf spots are light brown with purple margins, with heavy infection resulting in leaf abscission. On nonvariegated *L. sinense*, leaf spots are brown, with prominent yellow halos. Daconil, Dithane M-45, Thiabendazole, and Benlate gave excellent disease control.

Phytopathology 64:255-256

Additional key word: cross-inoculation.

Ligustrum sinense Lour. is a hardy, semideciduous shrub used as accent or foundation plants around the home. Variegated and nonvariegated forms of this species exist, with the variegated much more popular.

An undescribed leaf spot on *L. sinense* has become increasingly serious in Florida. Symptoms on variegated *L. sinense* begin as tiny, reddish, circular leaf spots, which enlarge to form light-brown lesions with purple margins. The lesions often coalesce, followed by leaf abscission. On nonvariegated *L. sinense*, leaf spots are light brown with dark brown margins, have prominent yellow halos, and measure 1 to 2 mm in diam. *Corynespora cassiicola* (Berk. & Curt.) Wei was consistently associated with the leaf spot disease of variegated and nonvariegated *L. sinense*. We report here evidence for the pathogenicity of *C. cassiicola* to *L. sinense* and for control of it with several fungicides.

MATERIALS AND METHODS.—Isolates of *C. cassiicola* were grown on potato-dextrose agar (PDA) or V-8 juice agar (VJA) for 10 to 14 days under continuous fluorescent light, which promoted sporulation. Spores were suspended in sterile tap water. The remaining mycelium plus agar was comminuted in sterile tap water for 30 s in a Waring Blendor. These inocula were filtered through several layers of cheesecloth and combined. The

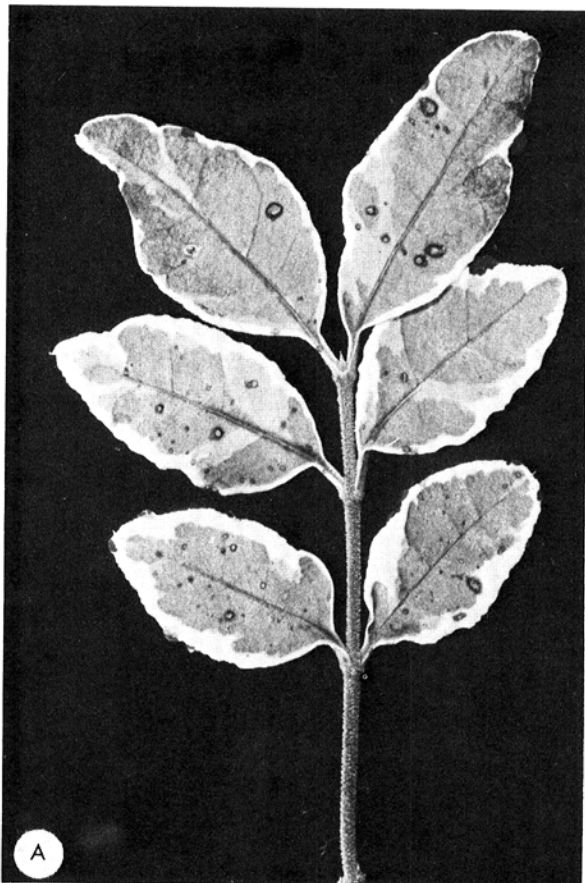


Fig. 1. Leaf spot of *Ligustrum sinense* caused by *Corynespora cassiicola*: A) variegated *L. sinense* showing light-brown lesions with purple margins; B) nonvariegated *L. sinense* showing light-brown spots with dark-brown margin and prominent yellow halo.

combined inoculum was sprayed on both leaf surfaces of the test plants with a glass atomizer and pressure pump at 6.89×10^3 N/m² (1 psi). Control plants were sprayed with sterile water. Then plants were covered with polyethylene bags and incubated in a mist chamber in the greenhouse. The bags were removed after 3 days, and plants were left in the mist chambers an additional 4 days, when the plants were transferred to greenhouse benches. Disease readings were made within 10 days following inoculation, by estimating the percentage of leaves infected.

Several pathogenicity trials showed that a number of isolates of *C. cassiicola* from variegated *L. sinense* were pathogenic and a highly virulent isolate was selected for use in further experimental studies. Isolates of *C. cassiicola* were also obtained from nonvariegated *L. sinense*, hydrangea (*Hydrangea macrophylla* Ser.) (2), and cucumber (*Cucumis sativus* L.) (1). These isolates, plus the virulent isolate from variegated *L. sinense*, were used in cross-inoculation trials employing all combinations of isolates and hosts.

Four fungicides were tested for effectiveness in disease control: Benlate 50 WP [methyl 1-(butylcarbamoyl)-2-benzimidazolecarbamate] at 0.57 g/liter; Daconil 75 WP (tetrachloroisophthalonitrile) at 1.7 g/liter; Dithane M-45 (coordination product of zinc ion and manganese ethylene bisdithiocarbamate) at 2.25 g/liter; and Thiabendazole [2-(4-thiazolyl) benzimidazole] at 0.57 g/liter. Surfactant F (E. I. DuPont De Nemours & Co., Inc., Wilmington, Delaware) was added to Benlate and Plyac (Allied Chemical, New York, New York) was added to the other fungicides, each at 4 drops/liter. Six variegated *L. sinense* plants in 10.2-cm (4-in) diam pots were sprayed to runoff with each fungicide 8 days and again 1 day prior to inoculation in the manner described above. Six plants not treated with fungicides were

inoculated and six more nonsprayed plants were left uninoculated as controls. Disease ratings were made as described above.

RESULTS AND DISCUSSION.—Inoculation with *C. cassiicola* isolated from *L. sinense* produced symptoms indistinguishable from those found on naturally infected plants. On the variegated plants, tiny, reddish, circular leaf spots were formed, which enlarged to light-brown lesions with purple margins. On nonvariegated plants, typical brown lesions with distinct yellow halos were produced (Fig. 1). The fungus was consistently reisolated from the resulting lesions. These results prove that *C. cassiicola* is the causal agent of these diseases.

In cross-inoculation trials with isolates of *C. cassiicola* from variegated and nonvariegated *L. sinense*, hydrangea, and cucumber, the respective isolates from hydrangea and cucumber were host specific. The isolates from variegated and nonvariegated *L. sinense* were cross-pathogenic, but neither one attacked hydrangea or cucumber.

All fungicides tested gave excellent disease control when used as protective sprays. Disease incidence on the plants that were sprayed with fungicide and then inoculated ranged from an estimated 0.12% of the foliage infected on Benlate-treated plants to 1.8% on Daconil-treated plants, compared to 31.2% on the inoculated controls that received no fungicide. Untreated and treated noninoculated control plants were free from infection.

LITERATURE CITED

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