Virginia Cooperative Extension

Plant Disease Fact Sheets

2000 PUBLICATION 450-607W

Fire or Botrytis Blight of Tulip

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Fire, or Botrytis blight, is by far the most common and destructive disease of tulips, especially in areas where tulips are grown in the same soil year after year. The disease is caused by the fungus *Botrytis tulipae*.

Symptoms

Minute, yellowish spots, somewhat elongated in the direction of the leaf veins and surrounded by a darker, water-soaked area, appear on leaves. Lesions are slightly sunken and give the leaf a speckled appearance (Fig. 1). As they enlarge, the lesions become more depressed and their color changes to a whitish gray or brown. At this stage the margins of the lesions are quite definite. The lesions may enlarge and coalesce, eventually involving the entire leaf. When an infection occurs on the leaf margin near the tip, the leaf wrinkles and bends to one side. New leaves and shoots that form on plants that were infected the previous year may be malformed or appear scorched, hence the name "fire." A grayish, fluffy growth of the causal fungus develops on dead tissues during humid weather.

Fig. 1. Botrytis lesions on tulip flower and leaf. (Photo by Virginia Tech Photo Lab)

Lesions on stems resemble those on leaves but are more elongate and more depressed. A lesion may extend through the stem, causing it to weaken and break at the point of the attack.

On flowers, infections appear as minute lesions or spots that are whitish to light brown. After the lesions enlarge, they turn a deeper brown and may involve the tissue that surrounds the base of the petals. This tissue becomes dry and wrinkled. Blighting may also take place when the flower is still in the bud and prevent the bud from opening.

Small black structures the size of a pinhead often are found on the outer bulb scales of tulips with Botrytis blight. These are the sclerotia, or resting bodies of the fungus. Deep-yellow or brown, circular, sunken lesions may be present on outer scales in the absence of sclerotia. The lesions rarely penetrate to the inner, white scales.

Disease Cycle

The fungus overwinters as sclerotia in the bulbs, on plant debris, or in soil around infected plants. Spores form on sclerotia in spring and spread to healthy tissue. Secondary infections occur from spores produced on dead plant tissue during the growing season. These spores may be blown to unopened flower buds, mature flowers, leaves, or stems and cause new infections.

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Control

Cultural Control

Once a tulip planting has been diagnosed with Botrytis blight, the area should be considered infested. The disease will become more serious with each succeeding tulip crop. Three-year rotations are recommended for areas where Botrytis blight has been diagnosed. In commercial plantings, it is recommended that tulips be planted in the same area no more than once every three years.

It is best to dig bulbs no later than 3 weeks after the petals fall. To prevent the fungus from spreading to the scales, remove stems from the bulbs as soon as they are dug. Examine the bulbs carefully before planting, and discard the diseased ones. Avoid injuring bulbs during handling because infection occurs more easily on injured bulbs than on uninjured ones. When the tulips come up in the spring, remove and destroy all infected plant parts as soon as they are noticed. Gather and destroy all plant debris as soon as blooming ceases.

Chemical Control

Several fungicides can be used on a preventative basis to control Botrytis blight. These include iprodione (e.g. Chipco 26019), thiophanate methyl (e.g. Cleary 3336), chlorothalonil (e.g. Daconil 2787), and vinclozolin (e.g. Ornalin). At higher label rates, vinclozolin can also be used for curative treatments on plants that are already infected. Consult the label or the current Virginia *Pest Management Guide for Home Grounds and Animals* (VCE Publication 456-018) or the Virginia *Pest Management Guide for Horticultural and Forest Crops* (VCE Publication 456-017), http://www.ext.vt.edu/pubs/pmg/, for details on rates and timing of application. For information on the proper use of pesticides and fungicides, refer to any current VCE pest management guide.

Adapted from previous publication by R. C. Lambe.