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BOTRYTIS BLIGHT OF TULIPS

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Tulips are one of the most popular bulbous plants. Their character of growth makes them suitable for formal planting, among shrubbery, and in formal borders when planted in small groups. The flowering period of tulips extends from late March to late May. There is a wonderful selection of colors, and if you carefully choose color combinations, tulips can make a beautiful display throughout their blooming season. Like most of its garden neighbors, the tulip may also fall victim to several diseases that mar its beauty, ruin its blossoms and sometimes destroy the bulbs entirely.

By far the most common tulip disease is known as "fire" or Botrytis blight. Every spring most varieties in Hoosier tulip beds will show symptoms of this disease on the leaves, unopened buds, petals and bulbs.

On blighted tulips, small, yellowish, water-soaked spots will appear early in the spring on the first formed leaves. During periods of wet, cool weather, these spots enlarge and soon involve large areas of the leaf.

With drier weather, the blighted areas become dry and brittle and finally are covered with a brownish-gray powder formed by the spores of the botrytis fungus. Some leaves may merely become spotted with the disease, while, in other cases, the entire outer leaf may be destroyed.

Frequently, unopened buds may be destroyed as result of attacks by botrytis.
blight on their stems. Light brown lesions, later turning darker brown, occur on the blossom stems. These infected stems generally rot off completely. In wet springs, white to light brown spots may appear on the petals of infected blooms.

The botrytis fungus, *Botrytis tulipae*, lives during winter on the tulip bulb as well as in soil where blighted tulips grew previously. Botrytis infected bulbs have characteristic shiny, small, black bodies the size of a pinhead on their outer brown scales. Underneath the outer scales, deep yellow or brown lesions will be found.

In spring, spores are produced by the fungus and splashed by rains to the surface of young leaves just emerging from the soil where early infections are started. From these early infections, more spores are produced and are splashed by spring rains to initiate infection of leaves, blossoms, petals and unopened buds.

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**Cultural Control**

Like most plant diseases, tulip blight can be prevented. However, it is difficult to eradicate once it is well established in the home garden tulip bed. A few simple precautions will prevent extensive damage to highly prized home tulip plantings:

1. Since the fungus which causes the disease lives over on diseased bulbs, the most important step in preventing the trouble is to avoid planting diseased bulbs. When you plant tulip bulbs in the fall, remove the outer brown scales and discard any bulbs showing the yellowish botrytis lesions on the inner scales.

2. Botrytis blight is always most serious when tulips are grown in the same area year after year. Moving the tulip bed each year, when possible, will greatly reduce damage. Do not plant tulips in the same spot more often than every third year. Tulip bulbs should be dug not later than 2 to 3 weeks after all petals have fallen. Stems should be removed from bulbs right after digging, and all disease-free tulips should be stored during summer in a cool, dry place.

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**Botrytis blight on unopened buds**

3. In the spring, keep your tulip bed under constant observation. Examine the sheathing leaves every third day, and immediately remove leaves or plants showing typical leaf symptoms of botrytis blight—before other plants become infected. As soon as the tulip bed is through blooming, carefully remove all dead leaves and other plant debris from the beds. If old stalks and blighted blossoms are allowed to remain in the bed the disease will likely persist for another year. As soon as the bulbs are mature, the entire top should be cut off below the ground, removed and destroyed.

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**Chemical Control**

To avoid early infection, drench the soil before emergence with benomyl (Benlate 50 WP) at the rate of one level tablespoon per gallon of water.* When the new plants are 3 to 4 inches high, spraying with any one of the following chemicals is suggested at weekly intervals until bloom:

1. Benomyl (sold as Benlate 50% WP) at the rate of 1/2 pounds per 100 gallons of
water (1 level tablespoon per gallon of water).

2. Mancozeb (sold as Fore 80% WP, etc.) at the rate of 1 1/2 pounds per 100 gallons of water (1 1/2 level tablespoons per gallon of water).

3. Zineb (sold as Dithane Z-78 75% WP, etc.) at the rate of 1 1/2 pounds per 100 gallons of water (1 1/2 level tablespoons per gallon of water).

4. General purpose flower spray formulations containing captan or zineb, used according to manufacturer's directions, will give fair control if the above materials are not available locally.

The addition of one teaspoonful of liquid household soap per gallon of spray will improve coverage of foliage.

*One level tablespoon equals 3 level teaspoons; 16 level tablespoons equals 1 level cup.

Blossom blight on flower stalk

"Tulip fire" on leaves

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