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FACT SHEET

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Phomopsis Leaf Blight and Fruit Rot of Strawberry

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Phomopsis leaf blight is a common disease of strawberry in the eastern United States Although the fungus infects leaves early in the growing season, leaf blight symptoms are most apparent on older leaves near or after harvest in Ohio. The economic importance of leaf blight in Ohio appears to be relatively minor; however, incidence of the disease has been increasing. The disease can weaken strawberry plants through the destruction of older foliage. Weakened plants can result in reduced yields the following year. In years highly favorable for disease development, leaf blight can cause defoliation and, in some cases, death of plants.

Especially in warmer climates, the fungus that causes leaf blight can also cause a fruit rot called soft rot. The first observation of Phomopsis fruit rot (soft rot) in Ohio was on plants growing under plastic culture in 1999. Although not common in Ohio, Phomopsis fruit rot can result in serious losses.

Figure 1. Symptoms of Phomopsis leaf blight on strawberry leaves. Young lesions resemble those caused by strawberry leaf spot.

Symptoms

Leaf lesions start as circular spots that are similar to that of leaf spot disease of strawberry; however, young lesions caused by Phomopsis often have a reddish halo that is not present on leaf spot lesions (Figure 1). As the disease progresses, irregular, often circular, zoned lesions may form. Typically, there are three zones in a lesion: a dark brown center, surrounded by a tan to light brown zone, which is surrounded by a reddish or purplish outer zone. In later stages of disease development, lesions, especially ones along veins, may become V-shaped, with the widest part of the V toward the margin of the leaflet (Figure 2). These V-shaped lesions are characteristic of the disease.

Symptoms develop on ripening or fully matured fruits. Early symptoms are round, pink, water-soaked spots. Eventually, spots enlarge and turn brown (dark brown in the center with a lighter brown edge). The texture of lesions also changes from water-soaked to a brown "crusty" surface. The brown crusty areas are actually clusters of tiny fruiting structures (pycnidia) produced by the fungus. These pycnidia can be observed with the aid of a 10x hand lens or magnifying glass. In later stages of development, fruit rot symptoms resemble that of anthracnose fruit rot. Lesions of anthracnose fruit rot do not develop pycnidia.

Figure 2. Symptoms of Phomopsis leaf blight in later stages of disease development. Note the V-shaped lesions caused by coalescing leaf spots.

Causal Organism and Disease Cycle

Phomopsis leaf blight and fruit rot (soft rot) of strawberry are caused by the fungus *Phomopsis obscurans*. The fungus survives overwinter within infested plant debris or within infected plant parts. The fungus produces pycnidia on old infected tissues. Each pycnidia contains thousands of spores (conidia) that ooze out under moist conditions and are disseminated to other plant parts by splashing water (rain or irrigation). In early spring, these conidia infect leaves or other plant parts and cause new infections. Free water on the plant surface is required for the conidia to germinate and infect the plants.

Although leaves are infected early in the growing season, symptoms generally do not develop until later in the season. The fungus remains symptomless in leaves as a "latent" or dormant infection. Later in the growing season, often during or after harvest in Ohio, the fungus becomes active and leaf lesions develop. If lesions develop prior to harvest, they can produce pycnidia which release conidia to infect the fruit. Disease development is favored by long wet periods (15 hours or more). Temperature has less effect on disease development than wetness duration. In fact, the fungus can cause infection over a wide range of temperatures.

Disease Management

Selection of planting material: Always use certified disease-free plants. Varieties appear to differ in their susceptibility to leaf blight; however, specific information on disease resistance is generally not available. Varieties that appear to be highly susceptible to leaf blight at your location should be avoided.

Sanitation: Removal of old infected leaves and other plant parts in which the fungus overwinters will decrease the amount of fungal inoculum available to initiate the disease the following spring.

Site selection: Always plant strawberries on a site with excellent soil drainage and air circulation. Since the fungus requires long wetness periods to infect plants, any practice that promotes faster drying of plant parts is beneficial to disease control. Always plant in a location with full (all-day) sun. Never plant in shaded areas.

Control weeds: Controlling weeds within the planting is an important cultural practice for successful strawberry production. In addition, weeds prevent air circulation in the planting, resulting in plants staying wet for longer periods of time.

Fungicide use: Fungicides are currently available that have good activity for control of leaf blight; however, emphasis for control should be placed on the use of cultural practices and avoiding highly susceptible varieties.

For the most current spray recommendations, commercial growers are referred to Bulletin 506-B2, *Midwest Commercial Small Fruit and Grape Spray Guide*, and backyard growers are referred to Bulletin 780, *Controlling Diseases and Insects in Home Fruit Plantings.*

Printed copies of these publications can be obtained from your county Extension educator or the Extension Publications Office, The Ohio State University, 216 Kottman Hall, 2021 Coffey Road, Columbus, Ohio 43210-1044.

More information about plant diseases and online versions of Ohio State University Extension plant disease fact sheets and bulletins, with color figures, are available on the following web sites:

http://plantpath.osu.edu
http://ohioline.osu.edu