



AVRDC - The World Vegetable Center

Fact Sheet

Pepper Diseases

Gray Leaf Spot

Stemphylium solani, S. lycopersici

Found worldwide in warm climates



Symptoms

Foliar symptoms are most prevalent on peppers at the seedling stage or on transplants in the plant bed. Lesions on foliage of older plants do not cause economic losses.

Lesions begin as small red to brown spots, 1 to 2 mm in diameter, which enlarge to circular spots, 3 to 5 mm in diameter. These develop white to gray centers surrounded by a red to brown margin. Lesions may be numerous causing leaves to turn yellow, then brown and drop.

Similar lesions may occur, infrequently, on the younger stems and petioles; fruit are not affected.

Conditions for Disease Development

The pathogen can persist on dead or dying plant material or on alternate hosts such as other solanaceous crops (tomato, eggplant, and certain potato species) and weeds. The disease often begins on young seedlings. The fungus spores are disseminated by wind, wind-driven rain, or rain splash.

Disease is favored by extended periods of leaf wetness, such as 16 hr of rain or dew at night, and by moderate to warm temperatures, such as night and day temperatures of 20°C and 30°C, respectively. The optimum temperature for infection is 25°C with a range from 15°C to 25°C. Leaf wetness duration, which is required for the fungus spores to germinate, is more important than temperature in establishment of infection. This may occur in seedbeds when soil moisture is retained or where insufficient drying of the foliage occurs due to overhead sprinkler irrigation. Furrow irrigation is less favorable for disease development than overhead sprinkler irrigation. Fungus sporulation is also favored by high relative humidity.

How to Identify Gray Leaf Spot



Small red-brown spots appear, later developing gray inner centers



Stem lesions

Control

Many resistant cultivars are available. Check young plants carefully for first signs of the disease. Protectant fungicides applied at early onset of disease symptoms in susceptible pepper varieties will provide control. The local extension agent should be consulted for those resistant cultivars that are most suitable for the region, and for those fungicides that are available for application.

Avoid overhead sprinkler irrigation. Avoid establishing seedbeds near tomato or pepper production fields.

Minimize leaf-wetness periods when growing transplants by using raised beds, avoiding shading, and ventilating well. Irrigate transplants in the morning to prevent leaf wetness during evening hours. Check seedlings/transplants carefully before setting them in the production field.

In the production field, rotate with non-solanaceous crops. If possible, remove diseased plants or destroy them immediately after harvest. Remove volunteer peppers and solanaceous weeds or vegetable crops

that may harbor the fungus. Alternatively, bury diseased pepper crop debris by deep-plowing to reduce spore levels available for infection of new plants. Avoid planting overlapping pepper crops in adjacent areas.

For more information on the production of pepper and other vegetables, go to www.avrdc.org.