

# Gray Mold – A Silent Strawberry Nemesis

Stephen Vann  
Assistant Professor -  
Urban Plant Pathologist

Rick Cartwright  
Professor -  
Plant Pathologist

## The Disease Organism

Gray mold is caused by the fungus *Botrytis cinerea*. In Arkansas, it is usually first noticed in late winter and early spring, especially if conditions stay wet, but the disease may get its start on transplants during the fall. Gray mold is common in all strawberry fields of the state where the fungus produces millions of spores on dead and dying plant parts. Spores, moved around by wind and splashing water, spread the fungus from plant to plant and to nearby fields. Flowers and leaves damaged or killed by frost are more easily infected by the gray mold fungus, and frost damage will make the disease worse in the spring.



Cool, wet weather strongly favors the disease. Plants and parts that are wounded by frost, harvesting or herbicides will increase the disease and lead to problems during strawberry harvest. In the southeastern states, it has been estimated that greater than 90 percent of fruit infection originates from leaves and flowers killed or damaged by frost (Dr. Frank Louws, NCSU, personal communication).

## Symptoms

Gray mold is best known for causing a fruit rot that often develops on already picked fruit, making it unmarketable. However, fruit rot symptoms and yield losses may occur at the beginning of harvest, during shipping or after sale. Other important symptoms include blossom, leaf and petiole collapse. Infected plant parts become covered with gray fuzzy masses of spores followed by a soft rot (Figure 1, back page). In some cases, even the crown becomes infected and rotted during the late fall, winter or early spring (Figure 2, back page).

## Disease Control

Fungicide applications are the most common way of controlling gray mold. However, preventing frost injury to strawberries is critically important to avoid more severe disease in the spring and to make the spring fungicide program even more effective. It is also helpful to remove dead or dying leaves, flowers or fruit following the winter. This removes quite a bit of the fungus present and can help reduce spring infections, but may be impractical.

During the early spring, when wet, cool conditions become favorable

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**Prevent frost injury to avoid more severe gray mold and  
make it easier to control with fungicides in the spring.**

for gray mold and when 10 percent of plants start to flower, a protectant fungicide spray program should be started (Dr Frank Louws, NCSU, personal communication).

Applications early in the flowering period, before too much infection has occurred, are very important in maintaining effective control later. These early applications are essential in minimizing fruit rot prior to and after harvest.

The quality of fungicide application is also extremely important because it is difficult to get good coverage on strawberry plants. A high spray volume of 100 gallons per acre and the use of three hollow cone nozzles per bed will greatly improve plant coverage and the effectiveness of fungicides. The nozzles should be spaced and pointed to spray straight down and inward at an angle from each side (Dr. Steve Bost, UTK, personal communication).

#### **Read and follow the fungicide label.**

Fungicides currently labeled for control of gray mold in strawberries include Elevate (fenhexamid), Captan,

Switch (cyprodinil plus fludioxonil), Rovral (Iprodione) and Topsin M (thiophanate-methyl).

In North Carolina, an effective fungicide spray program on plasticulture strawberries consists of Elevate rotated with Captan every 7 to 10 days starting at early flowering and continuing through harvest (Dr. Frank Louws, NCSU, personal communication).

A popular program in Tennessee plasticulture consists of two applications of Elevate followed by a Captan application, then repeated as needed. Spray intervals are again about 7 to 10 days.

Since the fungus can become resistant to a fungicide applied repeatedly, the same fungicide should not be sprayed more than twice before changing to a fungicide with a different mode of action. Check the label for more information. Although many fungicides are somewhat rainfast, it is a good idea to time the application so that the fungicide has at least four hours to dry on the foliage before rainfall, if possible.

### **Read and Follow All Fungicide Labels!**



**Figure 1. Early gray mold infection of leaflets and fungal spores on petiole of freeze-injured plant.**



**Figure 2. Gray mold infecting leaves, petioles and crowns on winter-injured strawberry plants.**

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**DR. STEPHEN VANN** is assistant professor - urban plant pathologist, University of Arkansas Division of Agriculture, Cooperative Extension Service, Little Rock, and **DR. RICK CARTWRIGHT** is professor - plant pathologist, University of Arkansas Division of Agriculture, Cooperative Extension Service, Fayetteville.

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