



This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

## Strawberry

Botrytis fruit rot, or Gray mold of strawberry is one of the most common and devastating diseases wherever strawberries are grown. The fungus that causes Gray mold is *Botrytis cinerea*. Gray mold mainly develops on picked fruit, but can appear in the field before harvest during prolonged wet weather. When flowers are infected, petals and pedicels turn brown and die. On fruit, rot can appear on any part, but commonly appears first on the calyx (stem end of the fruit). Infected areas turn light to medium brown. Unripe fruit that are infected often become misshapen, and may die before maturity. Diagnostic is the mass of gray mycelium, conidiophores, and spores of the fungus that give the disease its common name of Gray mold. Nitrogen applications during the fruiting season can increase the incidence of Gray mold by 60-80% when weather conditions are favorable for disease. Fungicides sprays are the primary means of control, as there are no highly resistant cultivars. Unfortunately, *Botrytis* has developed resistance to many of these fungicides in certain areas. Dr. Terry Kirkpatrick is inviting Arkansas strawberry growers to participate in a survey designed to discover if resistance to commonly used fungicides is present in Arkansas strawberry field.

## Strawberry Gray mold-*Botrytis cinerea*



University of Georgia Plant Pathology Archive, University of Georgia, Bugwood.org

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### Memo

**TO: Mid-America Strawberry Growers**  
**FROM: Terry Kirkpatrick, Extension Plant Pathologist and Jim Goodson, President - Mid-America Strawberry Growers**  
**Date: March 6, 2012**

**RE: Survey of fungicide resistance in gray mold in strawberry fields in our region**

Fungicide resistance in gray mold (*Botrytis*) has been detected in the southeastern states. Resistance to fungicides is a major concern for us all, because when local fungal populations develop resistance to fungicides, controlling grey mold may be much more difficult because some fungicides may not be effective any longer. We do not know whether the *Botrytis* in our region has developed or is beginning to develop resistance to any of the fungicides we rely on for *Botrytis* control – but we need to know! We need your help in conducting a survey of gray mold from fields across our region



this spring. Dr. Guido Schnabel, an Extension plant pathologist at Clemson University, has developed a technique for determining resistance in Botrytis to 7 different classes of fungicides. He has offered to conduct assays for our Mid-America Association to determine if resistance is developing in this region of the country. This service is free, but samples **MUST** be collected and handled properly in order for the results to be meaningful. Results of this survey will be presented at our summer meeting. Accompanying this memo are guidelines for collecting the samples. I will provide you with cotton swabs and envelopes for mailing the samples to Dr. Schnabel's lab. **Please let my research assistant, Cathy Howard (choward@uaex.edu; 870-777-9702, extension 128) know your mailing address as soon as possible so we can get the swabs and mailers to you.**

Thank you for your participation in the very important survey. If you have any questions you can contact me at tkirkpatrick@uaex.edu or 903-276-4484.

#### Collecting and Mailing Gray Mold Samples for fungicide Resistance Testing:

##### Sampling Procedure:

Obtain cotton swabs and postage paid envelopes from: Cathy Howard, University of Arkansas Southwest Research & Extension Center. (870)777-9702, extension 128 or choward@uaex.edu

Sample 10 individual berries with fresh gray mold lesions randomly from the site. Do not sample from badly rotted or dried berries. Use a fresh cotton swab for each berry. Return the swab to its package once sample has been collected. When sampling the lesion, use only enough force to collect the fungal mycelium and spores; do not rub the fruit hard enough to collect fruit tissue (Figure 3). Hint: if the cotton swab is pink, discard and take another sample. Place all 10 swabs/individual packages in the postage paid mailing envelope. Please include your name, address, and email address. Ship to:

**Guido Schnabel  
Clemson University  
School of Agricultural, Forest, and Environmental  
Sciences  
114 Long Hall**

#### Clemson, SC 29634

You can expect results in form of an electronic e-mail report 4 days after Dr. Schnabel has received the samples

#### Turf

Powdery mildew of turf, caused by *Blumeria graminis*, is usually found in the spring and autumn when the disease is favored by cool, humid, cloudy periods and temperatures are 41-72°F. Symptoms begin as isolated colonies of whitish fuzzy growth on leaves and sheaths. The fungus grows quickly to cover most of the leaf surface with superficial, gray to white patches that appear powdery or dusty. Heavily infected leaves turn yellow and then tan or brown as they die. Powdery mildew is more severe in shaded areas with poor air circulation. Areas where powdery mildew is a problem should be mowed high, watered as needed to avoid drought, and fertilized to promote good growth. Excessive amount of fertilizer should be avoided. Commercial applicators may use Junction, or Rubigan, or Banner Maxx. Homeowners may use Fertilome Liquid Systemic fungicide, or Ortho Lawn Disease Control, or Monterey Fungi-Fighter, or Fertilome F-Stop granules or Bayer Advanced Fungus Control or Lawns.

#### Grass family Powdery mildew- *Blumeria graminis*



Clemson University - USDA Cooperative Extension Slide Series, Bugwood.





Sherrie Smith

### Cheat grass Powdery mildew- *Blumeria graminis*



Sherrie Smith University of Arkansas Cooperative Extension

### Powdery mildew spores-*Blumeria graminis*



Sherrie Smith University of Arkansas Cooperative Extension

### Azalea

Azalea Leaf gall, caused by *Exobasidium vacinii*, produces thickened, fleshy, distorted areas on tender new leaves in the spring. New growth is especially vulnerable during cool, wet springs. The galls are pink to white in the beginning, but eventually become brown with age. Older leaves are safe from infection. Azalea Leaf gall does not kill the plant, but is an unattractive nuisance. Blueberries and camellias are also susceptible. Good sanitation practices go a long way toward controlling this disease. Galled leaves should be removed from the planting as soon as they appear. Chemical control on azalea should start at the first sign of new growth in the spring. Products containing mancozeb, or triadimefon, or myclobutanil, or chlorothalonil may be applied at bud break and at 10-14 day intervals until new leaves harden.

### Azalea Leaf gall-*Exobasidium vacinii*



Sherrie Smith University of Arkansas Cooperative Extension



Sherrie Smith

**Azalea Leaf gall-*Exobasidium vacinii***



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**Azalea Leaf gall-*Exobasidium vacinii***



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