



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.

## Cucurbits

Gummy stem blight caused by *Didymella byroniae* is a serious disease of cucurbits, affecting melons, squash, and cucumbers. Early leaf symptoms are water-soaked, gray-green spots on cotyledons and leaves. Spots enlarge, become irregular and dark brown. Small black fruiting bodies may be seen in the spots. Lesions on stems are oblong, water-soaked areas that turn brown to dark brown and can eventually girdle the stem causing the collapse of the plant. Brown sticky exudates often ooze from the lesions.

The disease is sometimes called black rot when fruit is infected. Initial symptoms on fruit are water-soaked spots that enlarge, become dark, and have the typical oozing from the lesions. Under moist conditions white mycelium will form. Fruit can rot completely in 2–3 days under conditions favorable for disease development. Black fruiting bodies may be found on infected fruit as well as stems and leaves. Fruit injured by insects or poor cultural practices are more vulnerable. The fungus can survive on seed, crop debris, and in soil.

A two-year crop rotation with non cucurbits, clean seed, and chemical applications of fungicides are the best preventatives. Quadris, Cabrio, Bravo Ultrex, Bravo Weatherstik, and Pristine are labeled for Gummy stem blight. There have been reports of isolates resistant to strobilurins, so switching back and forth between fungicides is a good idea.



APS images, B.D. Bruton



Gummy stem blight

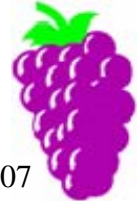
Sherrie Smith/University of Arkansas Cooperative Extension

## Strawberries

One of the most common fruit rot diseases of strawberry is gray mold caused by the fungus *Botrytis cinerea*. Serious losses can occur when favorable environmental conditions for disease development occur. The disease is most severe during prolonged rainy and cloudy periods during bloom and harvest. The gray mold fungus can infect petals, flower stalks, fruit caps, and fruit. Gray-brown, fluffy, fungal growth on infected tissue is responsible for the disease's name "gray mold."

Strawberries are particularly susceptible at bloom. One to several blossoms in a cluster may show browning and drying that may spread down the stem. Fruit infections usually appear as soft, light brown, rapidly enlarging areas on the fruit. The berry usually dries up, "mummifies," and becomes covered with a gray, dusty powder. Berries resting on soil or touching another decayed berry or a dead leaf in dense foliage are most commonly affected. The disease may develop on green fruits, but symptoms are more common as they mature. Handling of infected fruit will spread the fungus to healthy ones. After picking, mature fruits are extremely susceptible to gray mold, especially if bruised or wounded. Under favorable conditions for disease development, healthy berries may become a rotted mass within 48 hours after picking.

Pythium root rot flourishes under cool, wet conditions. Excess water and poor drainage create ideal conditions. Symptoms are blackened, decaying roots and wilted, yellowed foliage. This disease is also known as stunt disease as infected plants fail to respond to nitrogen fertilizers and are smaller than normal with small fruits and poor yield. This is a difficult disease to control. Chemical fumigation of fields and crop rotation are helpful. The only chemicals labeled for pythium diseases are Aliette and Ridomil Gold.



Leather rot of strawberry caused by *Phytophthora cactorum* can cause serious crop loss. The disease can infect the fruit at any stage of development. On green fruit, lesions are usually dark brown but can remain green and have a brown margin. The entire fruit turns brown as the infection spreads and takes on a rough, leathery appearance. Under moist conditions, a white mycelial mat forms on the fruit. Fruit eventually dries and forms shriveled, hard mummies. Growers suffer direct losses of fruit as well as having some infected fruit with no outward symptoms, but with an unpleasant taste and smell. Proper site selection is essential for control. *Phytophthora* requires saturated soils to multiply and infect so excellent drainage is crucial. Ridomil Gold and Aliette are effective for the control of leather rot when combined with good cultural practices.



Leather rot

Sherrie Smith University of Arkansas Cooperative Extension



Gray mold

Clemson University – USDA Cooperative Extension Slide Series,  
[www.forestryimages.org](http://www.forestryimages.org).



Pythium root rot

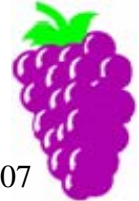
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## Spruce

We are seeing our first samples this season with bagworm infestations. Bagworms have come in on both blue spruce and Norway spruce this week. They also attack pine, spruce, cypress, black locust, willow, sycamore, apple, maple, elm, poplar, oak, and birch. Severe defoliation may occur followed by the death of the plant when large numbers of bagworms are present.

Bagworms feed on buds and foliage, sometimes chewing needles almost in two. They have one generation a year and over-winter as eggs in the female bag. There can be as many as 300–1000 eggs in a single bag. Hatching occurs in May–June depending on weather. When the larvae hatch they leave the bag, spinning down from it by a strand of silk that often acts like a parachute to carry them to new hosts. There they immediately spin themselves a bag, which becomes covered with plant debris from the host as they crawl around feeding. This camouflages them so well that they often go unnoticed until considerable damage has been done. In fact many homeowners fail to notice them until they have matured and permanently glued themselves to a stem. At that point they have quit feeding, and the damage has been done for the year.

The first line of defense is hand picking and destroying the bags. Be sure to remove the silk that binds the bag to the stem as it may cause girdling later. A biological control that works well is BT (*Bacillus thuringiensis*). This product kills only caterpillars. It will not harm beneficial insects. Sevin, malathion, and spinosad are also labeled for bagworm control.



**Bagworm at the crawling stage on blue spruce**

Sherrie Smith/University of Arkansas Cooperative Extension



**Bagworm feeding injury**



James B. Hanson, USDA Forest Service, [www.forestryimages.org](http://www.forestryimages.org)

## Juniper

Juniper scale can cause significant dieback on juniper when infestations are severe. Foliage turns a yellowish brown and takes on the appearance of a plant with inadequate nutrition. Juniper scale overwinters as nearly grown adults and matures in the spring. The female dies after laying eggs in the spring. The newly hatched nymphs crawl for about 24 hours before settling on a feeding site and growing a protective waxy coating.

It is at the crawler stage that scale is most vulnerable to treatment. Malathion or sevin will kill crawlers but often kills beneficial insects as well. Fine horticultural oil is very effective. Scale commonly attacks plants already weakened by disease or drought stress.



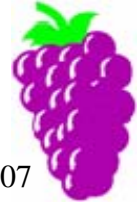
**Juniper scale**

Sherrie Smith/University of Arkansas Cooperative Extension



**Juniper scale**

Sherrie Smith/University of Arkansas Cooperative Extension



## Herbicide damage by Bob Scott

Herbicide symptomology quiz!

Try and identify the herbicide symptomology on the soybean below. The herbicide that damaged these soybeans is labeled for rice and is an Amide in the group of herbicides that inhibits Photosystem II. There is only one other herbicide currently in this specific group, but related herbicides include atrazine, butryl, and diuron. Be the first to email me back with the common name or tradename of this herbicide and win a prize.

P.S. Soybeans can tolerate herbicide drift of this kind and usually recover with moderate yield loss.

Bob



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