



Sherrie Smith
Keiddy Urrea

Arkansas Plant Health Clinic Newsletter

Follow us on social media



[Facebook](#)

Strawberry

This is turning out to be a very bad year for anthracnose on strawberry. Anthracnose Fruit rot is found wherever strawberries are grown. Three species of the fungus *Colletotrichum* have been associated with anthracnose on strawberry: *Colletotrichum acutatum*, *Colletotrichum gloeosporioides*, and *Colletotrichum fragariae*. Chandler, Camarosa, Treasure, and Albion are popular cultivars that are particularly susceptible. Symptoms on fruit appear as brown to black, water-soaked spots on green and ripe fruit. The lesions become sunken and firm, turning brown to black. Pink, salmon, or orange-colored masses of spores form in the lesion under humid conditions. The entire fruit may dry up and become mummified. Infected flowers may also dry up, or developing fruit remain small, hard, and misshapen. Lesions on strawberry stolons and petioles are often associated with anthracnose crown rot. Lesions begin as small red streaks, and rapidly become dark, sunken, elongated lesions. Pink spore masses form under humid conditions. When lesions encircle the stem, its leaf wilts and dies. The first symptom of anthracnose crown rot is wilting of the youngest leaves on the plant. Once the crown rot is extensive, the entire plant

wilts and dies. Anthracnose crown rot is most often caused by *Colletotrichum fragariae*. Anthracnose spores may survive up to nine months on debris in the field. Spread and severity of the disease may be reduced by practices that keep the foliage as dry as possible. Fields where high rates of nitrogen are used, especially ammonium sources of nitrogen, have significantly higher disease levels. Rotate Captan with Topsin M, or Quadris Top, or Pristine, or CaptEvate, or Elevate, or Fontelis, or Scala. To be effective, sprays should be started before the onset of the disease. Follow label for best results. Planting resistant cultivars such as Sweet Charlie, Florida Radiance, and Florida Elyana may be the most practical options for some growers.

Fresas by keiddy Urrea

Este año ha sido un mal año para el cultivo de fresas por la alta incidencia de la enfermedad conocida como antracnosis, la cual se encuentra presente en la mayoría de plantas de fresa. Esta enfermedad es causada por tres especies de hongo *Colletotrichum*: *Colletotrichum acutatum*, *Colletotrichum gloeosporioides*, y *Colletotrichum fragariae*. Algunos de los cultivares más susceptibles son: Chandler, Camarosa, Treasure, y Albion. Los síntomas en la fruta verde o madura, aparecen como manchas húmedas de color marrón, el tejido dentro de estas lesiones muere y toma un color negro. Masas de esporas de color rosado se pueden observar en estas lesiones cuando la humedad relativa es alta. Las frutas se puede secar y momificarse, o estas no se desarrollan



Sherrie Smith
Keiddy Urrea

normalmente quedando pequeñas y deformadas. Las flores que también se pueden secar.

La antracnosis de la corona de la fresa afecta la corona, tallo, estolones y los peciolo en la planta, esta enfermedad es causada comúnmente por el hongo: *Colletotrichum fragariae*. El primer síntoma de esta enfermedad es la marchitez de hojas más jóvenes de la planta. Las lesiones en los estolones y peciolo generalmente empiezan como pequeñas rayas rojas en los estolones y peciolo y luego se convierte en lesiones elongadas y con hundimiento progresivo dentro del tallo. Cuando la enfermedad ataca toda la corona, la planta marchita y muere. Las esporas de *Colletotrichum* puede sobrevivir en los residuos vegetales por aproximadamente nueve meses. Las practicas de cultivo como: mantener las hojas de las plantas secas, evitar excesiva aplicación de nitrógeno, rotar los ingredientes activos de los fungicidas, por ejemplo: rotar Captan con Topsin M, Quadris Top, Pristine, CaptEvate, Elevate, Fontelis, o Scala, y sembrar cultivares de fresa resistentes a antracnosis como: Sweet Charlie, Florida Radiance, o Florida Elyana, ayudan a mantener las plantas sanas.

Strawberry Anthracnose on Fruit-*Colletotrichum* spp.



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Strawberry Anthracnose on Fruit-*Colletotrichum* spp.

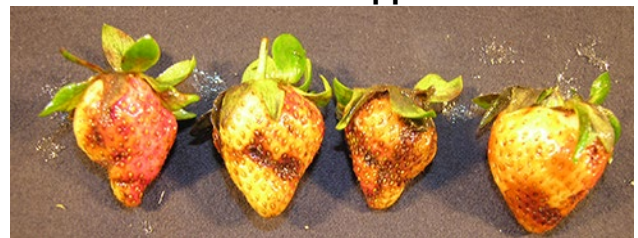


Photo by Sherrie Smith, University of Arkansas Cooperative Extension



Strawberry Anthracnose on Fruit-*Colletotrichum* spp.



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

Strawberry Anthracnose on stems-*Colletotrichum* spp.



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

Iris

Some of the early iris have bloom stalks up. One of the nicest attributes of bearded iris is the lovely fragrance. They are also one of the easiest perennials to grow. Iris requires good drainage and at least 6 hours of direct sun for best bloom but can tolerate part shade and a wide range of soils. They are not heavy feeders. A balanced fertilizer such as 5-10-10 or 6-10-6, applied once in early spring and again in early summer following bloom is adequate. The ideal pH is 6.8. Plantings with poor air circulation and too much water are prone to both foliar and root diseases. The most common foliage disease we see is Iris Leaf Spot caused by the fungus, *Cladosporium iridis*, (synonym *Heterosporium iridis*), teleomorph *Didymellina macrospora* (synonym *Mycosphaerella macrospora*). Symptoms are small, water-soaked lesions that develop rapidly into 1/2-inch- long spots with brownish purple centers and yellow margins. The leaf spots are found most often on the top portions of the foliage, but in severe cases can be found over the entire leaf. In such cases, leaf death may occur, weakening the plant. Iris leaves and flower stalks should be removed in the fall to reduce over-wintering inoculum. If possible, improve air circulation by thinning surrounding vegetation. Avoid overhead irrigation. Four to six sprays of an ornamental fungicide containing chlorothalonil (Daconil), or a fungicide containing thiophanate-methyl starting when the leaves are 4 to 6 inches high and repeated at 7-to-10-day intervals, will control the disease. Rates and timing will depend on individual labels.



Iris Leaf Spot-*Cladosporium iridis*



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

Iris Leaf Spot Spore-*Cladosporium iridis*

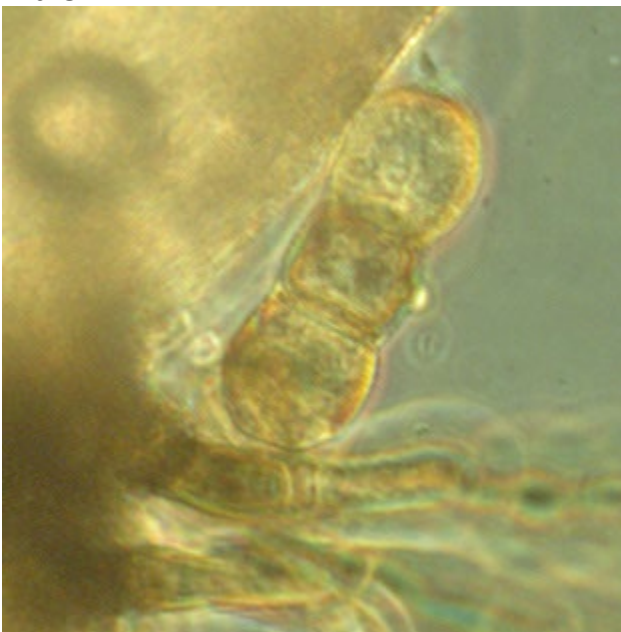


Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

Iris Leaf Spot-*Cladosporium iridis*

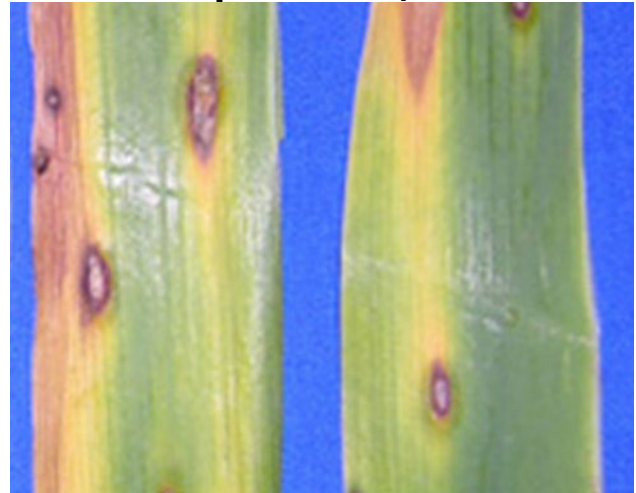


Photo by Sherrie Smith, University of Arkansas
Cooperative Extension

Iris Rust

Iris Rust is caused by the fungal pathogen *Puccinia iridis*. This rust occurs commonly on bearded and bulbous irises and on the species irises *Iris fulva*, *I. missouriensis*, *I. tenax* and *I. versicolor*. Iris rust will spread from leaf to leaf and plant to plant. It overwinters in mild climates. Symptoms are reddish-orange pustules that appear on both sides of the leaf. The fungal lesions may be surrounded by yellow margins. If there are lots of rust spots, the leaves and stems will turn brown and die. Rusts are favored by humid climates and moderate temperatures. Rust is a common and serious problem in the southeastern United States. Dew, rain, fog, high humidity, and overhead watering all encourage the development of Iris rust. The best way to control rust is to take measures to prevent it. Remove and destroy old foliage in the fall.



Sherrie Smith
Keiddy Urrea

Don't plant new healthy irises in a spot where you previously have had rust problems. If rust occurs, remove infected foliage. Fungicides containing Chlorothalonil, myclobutanil, and mancozeb will help control rust.

Iris Rust-*Puccinia iridis*

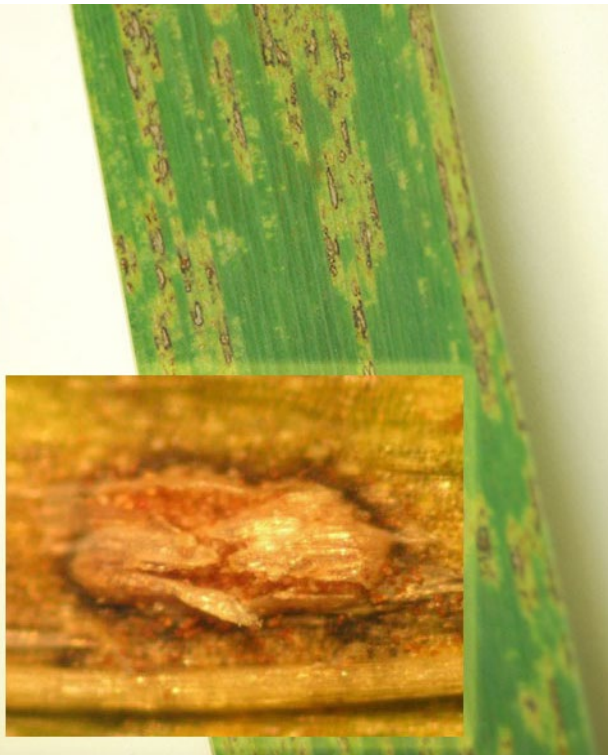


Photo by Mitch Crow, formerly University of Arkansas Cooperative Extension

Iris Bacterial Leaf Spot

Possibly the most aggravating disease of iris is Bacterial Leaf Spot, caused by *Xanthomonas campestris* pv. *tardicrescens*. Symptoms begin as small chlorotic water-soaked spots near the margins and leaf tips. The lesions enlarge and

turn light brown with whitish or grayish centers. The infection may follow the leaf veins down the leaves and the spots coalesce to blight large portions of the leaf. Bacterial Leaf Spot is easily confused with the fungal leaf spot. Both occur during periods of high humidity or rainy weather. The bacterial lesions are usually larger and more irregular in shape than fungal leaf spots. Unfortunately, it is possible to have both pathogens in a bed of iris. Bacterial Leaf Spot is easily spread on tools and by rain or irrigation splash. Good sanitation is essential. Remove all old foliage at the end of the season. If the disease is persistent in the bed, it can be useful to remove all the foliage at the end of the season and dip the rhizomes in a 10% bleach solution (one part bleach to nine parts water), before re-planting in a new location. The rhizomes are not infected by the bacterium, but the bacterium can be moved on them to a new planting spot.

Iris Bacterial Spot-*Xanthomonas campestris* pv. *tardicrescens*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

The University of Arkansas System Division of Agriculture offers all its Extension and Research programs to all eligible persons without regard to race, color, sex, gender identity, sexual orientation, national origin, religion, age, disability, marital or veteran status, genetic information, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.



Iris Bacterial Spot-*Xanthomonas campestris* pv *tardicrescens*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Iris Phytophthora Root Rot

Iris needs extremely well-drained soils. When over watered and/or planted too deeply, they may get a root rot caused by *Pythium* or *Phytophthora* spp. They should never be mulched. Symptoms are yellowing, stunting, root rot, and death. There is no good remedy except to start over in a more favorable planting location with fresh stock.

Iris Phytophthora Root Rot-*Phytophthora* sp.



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Iris Soft Rot

Iris Bacterial Soft Rot, caused by *Erwinia carotovora*, can be a devastating problem in some beds. Symptoms usually start in the middle of a fan with leaves turning yellow, then brown. Eventually the entire fan collapses. The base of the wilted leaves and the rhizome will be mushy, slimy and have a foul smell. The bacterium typically enters through wounds during warm months of the growing season. The soft rot becomes apparent in the spring or fall. Control is not easy. If possible, dig up the affected rhizome and remove diseased foliage and dispose of off the property. Cut all soft mushy parts off the rhizome back to healthy white tissue. Dip the rhizome in a ten percent bleach solution, (one part bleach to nine parts water) and allow to air dry for several days before re-planting. You may also dust the



Sherrie Smith
Keiddy Urrea

rhizome with dusting sulfur. Most importantly, use good cultural methods. Iris needs at least six hours of sun and good drainage to remain healthy. Avoid excessive amounts of nitrogen.

Iris Soft Rot-*Erwinia carotovora*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Iris Roundup Damage

Homeowners should be very careful about spraying weeds in their iris beds with Roundup. Heavy exposure can cause twisted stems and deformed blooms. Plants may have symptoms for 3 or 4 years.

Iris Roundup Damage-Abiotic



Photo by Allen Bates, formerly University of Arkansas Cooperative Extension



Sherrie Smith
Keiddy Urrea

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.

"This work is supported by the Crop Protection and Pest Management Program [grant no. 2017-70006-27279/project accession no. 1013890] from the USDA National Institute of Food and Agriculture."