



## Arkansas Plant Health Clinic Newsletter

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### Grape

Injured berries become susceptible to invasions by many species of fungi, yeasts, and bacteria as they ripen, and their sugar content passes 8%. Any of several fungi can cause Berry Rot, also called Sour Rot or Bunch Rot, including, *Aspergillus niger*, *Alternaria carbonarius*, *Alternaria tenuis*, *Botrytis cinerea*, *Cladosporium herbarum*, *Rhizopus arrhizus*, *Penicillium* sp., and others. These pathogens enter where injury has occurred by insects, birds or mechanical damage, or through lesions resulting from powdery mildew or other diseases on the berry. Conditions for development of Berry Rot include high relative humidity, rain, and overhead irrigation while berries are maturing. Initial symptoms of Berry Rot caused by *Rhizopus arrhizus* are splits running the length of the berry. Fruit juices may drip from the lesions. Later, a dark brown to black layer of fungal growth fills the split. The decay continues until the entire berry collapses. Leaf removal from around berry clusters immediately after berry set can significantly reduce the incidence of these fruit rots. Leaf removal also leads to tougher berry skins, thereby reducing the risk of fruit injuries. Leaf removal also improves air circulation. Good

insect and disease control are also helpful in controlling entry points for berry rots. Fungicides applied at the proper growth stages are often necessary:

- Fungicide at petal fall/beginning of berry formation
- Fungicide just before berries touch
- Fungicide at beginning of fruit coloring (veraison)
- Fungicide three weeks before harvest

Homeowners must rely on Captan, or Bayer Advanced Natria Disease Control, or Bonide Citrus, Fruit, and Nut Orchard Spray, or Kaligreen, or Milstop, or Spectracide Immunox Plus, or Bonide Mancozeb Flowable with Zinc, or Green Cure, or Bordeaux Mix. Kaligreen and Milstop are labeled for organic production. Commercial growers may use Topguard EQ, or Flint 50 WG, or Ziram Granuflo, or Aliette WDG, or Reason 500 SC, or gavel 75 DF, or Presidio.

### Grape *Rhizopus* Berry Rot- *Rhizopus arrhizus*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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## Grape Rhizopus Berry Rot- *Rhizopus arrhizus*



Photo by Sherrie Smith, University of Arkansas  
Cooperative Extension

## Watermelon

Pythium Cottony Leak, also known as Pythium Fruit Rot of watermelon, is caused by several species in the genus *Pythium*. This disease is most common and severe in heavy, poorly drained soils. Pythium Fruit Rot can occur on all cucurbits, including cucumber, pumpkin, squash, gourds, melons, and watermelon. The pathogen enters through wounds or where the fruit touches the soil. On most cucurbits, symptoms begin as brown, water-soaked lesions that enlarge quickly and become watery, soft, and rotted. On cucumber, a brown to dark green blister is the first symptom. The blistered area becomes watery and rotted. During wet weather, a cottony mycelial growth appears on the rotted areas of the fruit. Pythium fruit rot can spread rapidly through a field by means of contaminated equipment, and irrigation water. Excellent soil drainage is the best defense against pythium diseases. Planting on raised beds through plastic can also reduce incidence of pythium fruit rot as this improves drainage and prevents the fruit from contacting the soil. Homeowners may place fruit on boards or cardboard to prevent soil contact. Ridomil Gold SL and Uniform are labeled for control of pythium diseases in cucurbits but must be applied as a preventative at planting. These chemicals are ineffective if saturated soils remain saturated.





## Watermelon Cottony Leak-*Pythium aphanidermatum*



Photo by Christa Littlefield, University of Arkansas Cooperative Extension

## Watermelon Cottony Leak-*Pythium aphanidermatum*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Oak

Oak Leaf Spot, caused by *Tubakia dryina* (*Actinopelte dryina*), is a disfiguring, but not serious disease. Symptoms of *Tubakia* become noticeable during mid-to-late summer. Small to large tan to reddish-brown round spots develop on the leaves. The small black fruiting bodies of the fungus can be seen with a hand lens. When lesions develop on leaf veins, collapse of the leaf tissue occurs beyond the point of the vein necrosis. Severe infections can cause complete defoliation, although this is unusual. Fortunately, this usually occurs so late in the season that tree health is little affected. Rake up fallen leaves and dispose of them. Fungicide applications are not normally

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**Issue 26, August 7, 2017**

recommended. Trees that suffer from stress are more susceptible.

### **Oak Leaf Spot-*Tubakia dryina***



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

### **Oak Leaf Spot-*Tubakia dryina***



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

### **Corn**

Corn Smut, caused by the fungus *Ustilago maydis*, can produce startling symptoms, but is generally not considered a serious pathogen. Annual losses seldom exceed 2% where cultivars resistant to Corn Smut are grown. All aboveground parts of the plant can be affected, but Corn Smut is most spectacular when kernels are infected. Large galls form instead of normal kernels when the fungus invades the kernels and starts growing. Galls begin as glistening silvery-white to greenish-white growths, but eventually darken and become a mass of powdery, dark olive brown to black spores. The incidence of smut is higher on nitrogen rich soils, or recently manured soils.

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Resistant varieties are the best method of control. Infected plant parts should be removed before they can sporulate. In some parts of the world, infected ears are considered a delicacy while the galls are in the fresh soft stage. It is sold fresh or canned as huitlacoche, cuitlacoche, or maize mushroom.

### **Corn Smut-*Ustilago maydis***



Photo by Allen Bates, University of Arkansas Cooperative Extension

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."