



## Arkansas Plant Health Clinic Newsletter

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### Forage

Samples from Bermuda hay fields are coming into the clinic with nutritional deficiencies and foliar diseases. Disease in hay fields is closely linked to poor nutrition and unsuitable pH. Adequate water and good soil profile are the two important factors in forage crop production. Regular soil testing is the only way to accurately predict the amount and type of fertilizer needed yearly. Soil testing should be done at least every second or third year. Nutrients taken up by the crop are harvested with the crop and must be replaced. Six tons of hay per acre removes 300 pounds of nitrogen, 60 pounds of phosphorous and 240 pounds of potassium per acre. Optimum nutrient uptake occurs at a soil pH of near 7.0. Phosphorus is particularly limiting in strongly acidic soils. In soils with less than 4.0 pH, hydrogen, aluminum, and manganese become toxic to plants.

Plants in such situations are very prone to foliar diseases such as Helminthosporium leaf spot. Leaf lesions are irregularly shaped and brownish green to black. Extensive damage occurs when crowns and stolons are attacked. There are no fungicides labeled for hay fields. The problem must be addressed with proper fertilization and water regimes.

### Bermuda Helminthosporium Leaf Spot-*Helminthosporium (Bipolaris)* *cynodontis*



Photo by Sherrie Smith, University of Arkansas  
Cooperative Extension

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## Muscadines

Muscadine grapes have fewer disease problems than table grapes but are susceptible to Black rot caused by *Guignardia bidwellii*. Black rot can cause losses more than 80% when environmental conditions are coupled with a susceptible cultivar. Infective spores are released from overwintering structures on plant debris in early spring and carried by rain splash and wind to new leaves, petioles, stems, and fruit. All new growth is susceptible to attack. Symptoms on leaves are small circular tan spots that become reddish brown with a narrow band of dark brown tissue. Black fruiting bodies, pycnidia), develop in the middle of these lesions. Entire leaves are killed when a lesion girdles the petiole. Infection on berries begins with a small white dot. The dot rapidly grows to over 1cm in a single day and develops a reddish-brown ring. The infected berries begin to dry, shrivel, and become mummified within a few days. Pycnidia form on the mummified fruit. Black rot on muscadines can be controlled by applying Captan beginning after bloom and continuing every 14 days until August. Table grapes require spraying as soon as shoots are 10-16cm long continuing until berries contain about 5% sugar. All mummified berries and fallen leaves should be cleaned up to reduce inoculum. Some cultivars are less susceptible to Black rot than others.

## Muscadine Black Rot-*Guignardia bidwellii*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Muscadine Black Rot pycnidia-*Guignardia bidwellii*

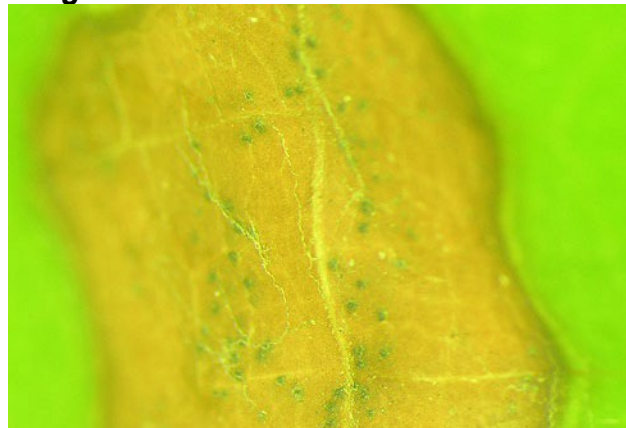


Photo by Sherrie Smith, University of Arkansas Cooperative Extension



## Muscadine Black Rot-*Guignardia bidwellii*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Corn

Two types of rust infect corn in Arkansas. Common corn rust caused by *Puccinia sorghi* is seen nearly every year but doesn't usually cause serious yield loss. Common rust development requires relatively cool temperatures (54 to 82 degrees F) and nearly 100% relative humidity for about six hours. Young leaf tissue is more susceptible to infection than emerged leaves. After tasseling, leaves should be relatively immune to further

common rust development. Common rust has cinnamon-brown colored round to elongated pustules that frequently form in bands on the lower part of the leaf. Common rust pustules form on both upper and lower sides of an individual leaf, distinguishing Common from Southern rust, which predominately sporulates on the upper leaf surface. Unlike Common rust, Southern rust, *Puccinia polysora*, is favored by high temperature. The pustules are smaller, rounder and orange in color than common rust. Unlike Common rust they develop primarily on the upper surface of the leaf. Southern rust can cause serious yield losses as heavily infected leaves are killed. There are resistant hybrids available. Fungicides labeled for rust control in Arkansas are Tilt, Quilt, Propimax, Stratego, and Headline. Quadris is labeled for Common rust, but not Southern rust. The clinic has received several samples with Common rust, but we have not had any Southern rust samples yet.

## Corn Rust spores-Top: Common rust, Bottom: Southern rust

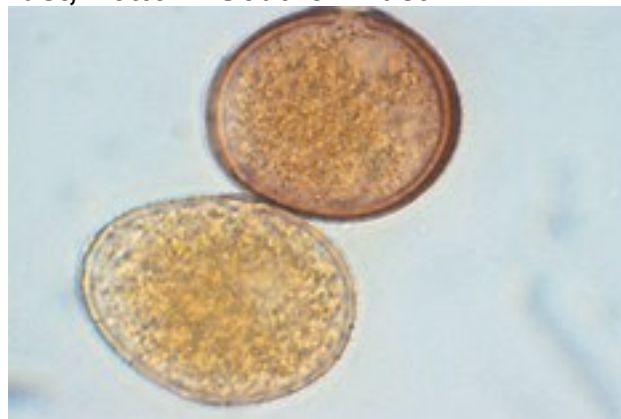


Photo by APS library



## Corn Southern Rust-*Puccinia polysora*

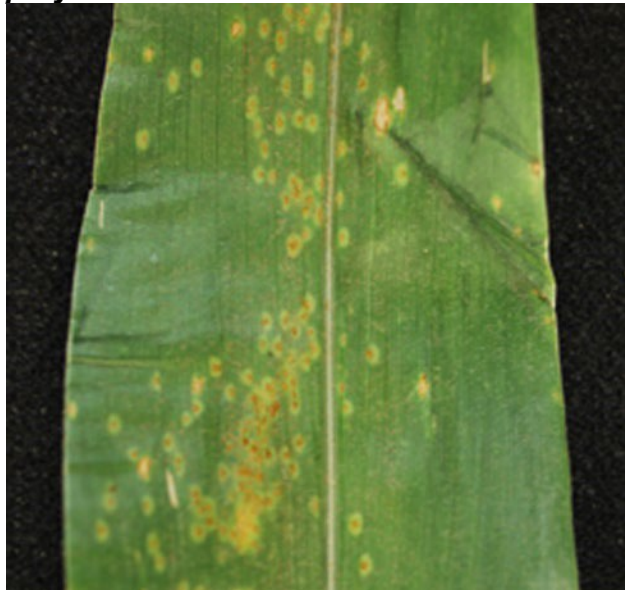


Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Tomato

Catfacing is a term used for fruit that is grossly deformed at the blossom end during growth. This has been attributed to cold nights during early fruit set and development. Some varieties seem to be more prone than others. Fruit that develops later will not have the deformities. The best way to avoid this condition is to spread planting dates out and avoid planting too early.

## Tomato Catfacing-abiotic



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

## Herbicide damage by Bob Scott

Herbicide symptomology quiz!

The damage to these soybeans was the result of a treatment that is labeled and commonly used on soybean. The herbicide is used PRE or PPI and sometimes POST for the control of grasses and small seeded broadleaves. Under some conditions this herbicide can cause the "drawstring" effect on the mid-vein of the soybean leaf and the resulting leaf "puckering" as seen in the photo. This effect is purely cosmetic and will not affect soybean yield. This herbicide is also labeled for use and commonly used in Corn, where it can sometimes cause injury referred to as "buggywhipping". The mode of action is seedling growth inhibitor (shoot).

What is it? Be the first to respond to me via email at [bscott@uaex.edu](mailto:bscott@uaex.edu) and win a prize!



**Photo by Bob Scott, 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.

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