UofA UNIVERSITY OF ARKANSAS DIVISION OF AGRICULTURE
Cooperative Extension Service

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SPDN Southern Plant Diagnostic Network

Department of Plant Pathology

PLANT HEALTH CLINIC NEWS

Issue 20-July 19, 2011

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.

Corn

Crazy top of corn, causal agent *Sclerophthora macrospora,* is widespread in the United States. This disease is one of the several downy mildews that attack corn and sorghum. Symptoms depend on the time of infection and degree of colonization by the pathogen. Excessive tillering (six to ten tillers per plant), rolling, and twisting of the upper leaves, and leafy proliferation of the tassel are common symptoms. Leaves may be narrow, straplike, leathery, chlorotic, and stunted. The oospores are 45-75um in diameter, hyaline to yellow, globose, with granular contents. Sporangia are lemon shaped 30-65 x 60-100, attached to short, simple sporangiophores emerging from stomata. Crazy top is a problem when soils have been flooded shortly after planting or before plants are in the four to five leaf stage. Water trapped in the whorl of small plants can also lead to infection. Soil or leaf saturation for 24-48 hours is enough for infection to occur. There are no chemical controls for Crazy top. Good soil drainage is the only preventative.

Corn Crazy top-*Sclerophthora macrospora* (leaf distortion)

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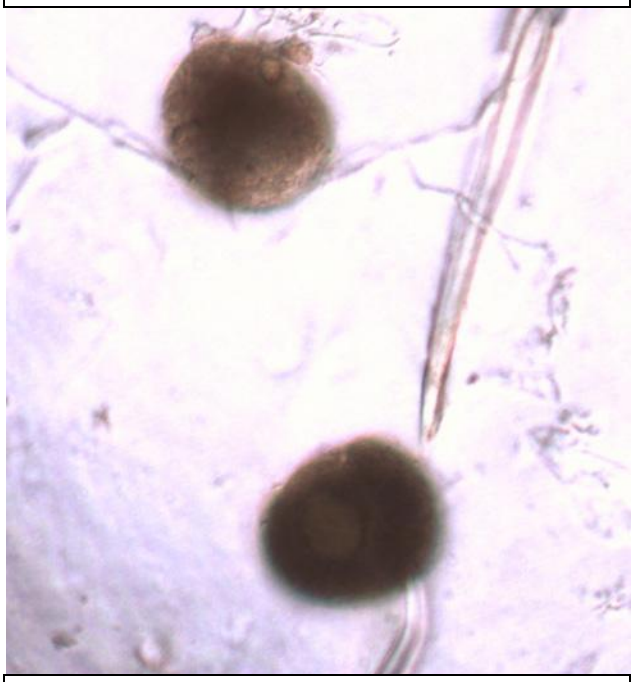
Corn Crazy top-*Sclerophthora macrospora* (Oospores)



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Corn Crazy top-*Sclerophthora macrospora* (leafy proliferation of tassel)

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Corn- Branched ear

Branched ears develop when pollination of the main ear is poor. This is usually attributable to weather factors at pollen shed.

Corn Branched ear-abiotic

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Grape

Downy mildew of grape occurs in production areas where it is warm and wet during vegetative growth of the vine. The causal agent, *Plasmopara viticola*, can attack all green parts of the plant. Leaf lesions are yellowish and oily, or angular, yellow to reddish brown, and limited by the veins. A dense, white, cottony growth of sporulation occurs on the underside of the leaf. Infected shoots curl into a shepherd's crook, and become white with sporulation, eventually turning brown and dying. These same symptoms can occur on petioles, tendrils, and young inflorescences. Leaves drop prematurely, reducing sugar content in the fruit and decreasing winter hardiness of the buds. Young berries are also highly susceptible. They appear grayish and become covered with downy felty sporulation. Infected berries do not ripen normally, but remain firm, eventually dropping from the vine. As with all downy mildews, good soil drainage is essential. The cleanup of fallen leaves and berries, and the removal of infected shoots helps limit inoculum, but rarely are these measures sufficient in themselves to control Downy mildew in areas with high disease pressure. Fungicides must be applied, starting at 3-6" shoot growth. Captan, Mancozeb, Ziram, Abound, Sovran, Pristine, Aliette, Scala, Rovral, Reason, and Gavel are labeled for Downy mildew control.

Grape Downy mildew-*Plasmopara viticola* (upper leaf lesions)

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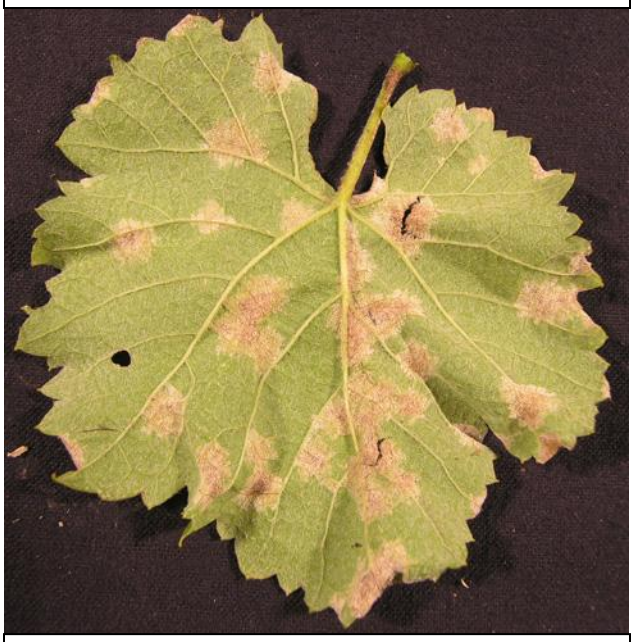
Grape Downy mildew-*Plasmopara viticola* (lower leaf lesions)



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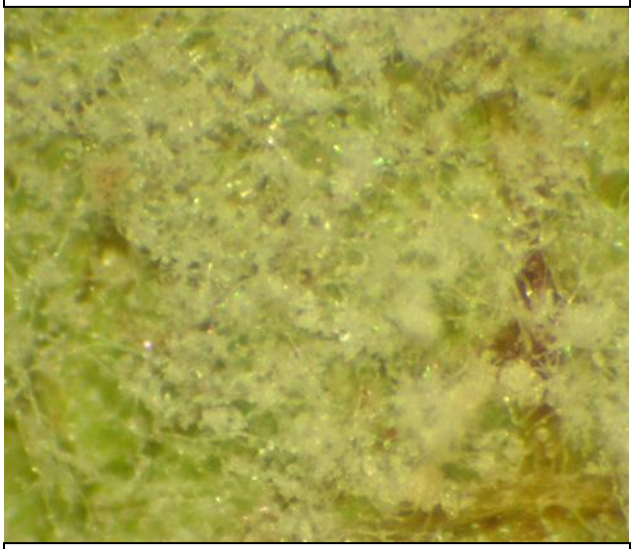
Grape Downy mildew-*Plasmopara viticola* (lower leaf sporulation)



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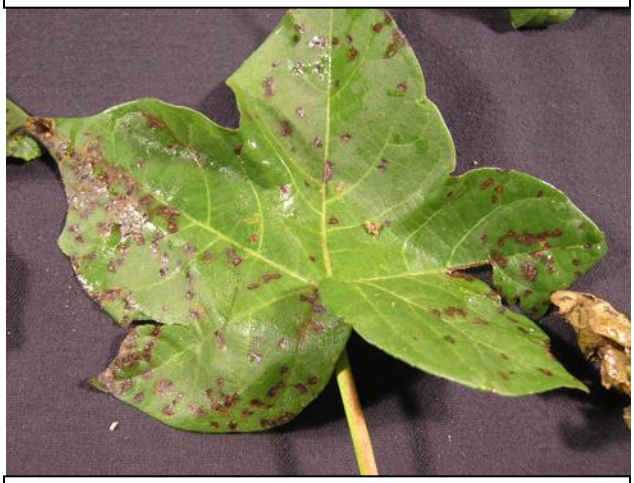
Cotton

Bacterial blight is a major disease of cotton in most of the cotton production areas of the world. The causal agent of Bacterial blight is *Xanthomonas campestris* pv. *malvacearum,* an aerobic, Gram-negative rod-shaped bacterium. The disease can attack stems, leaves, petioles, and pods. The first symptoms on seedlings are small, water-soaked circular or irregular spots that turn brown. Spots on the hypocotyls are black, elongate lesions that often girdle the stem and cause seedling death. Leaf lesions first appear as minute water-soaked spots, becoming larger, angular, and black. Bacterial oozing may be observed during wet, humid conditions, Often vascular infections follow the main ribs of the leaf causing a black discoloration along the veins. Cotton bacterial blight is known as Blackarm when the disease extends from infected leaves into the petiole and stem. This can cause girdling of the stem, followed by stem death and stem breakage. Symptoms on the bolls begin as round water-soaked raised lesions that become irregular in shape and sunken and turn brown to black. Secondary infections can cause severe boll rots. Crop residue should be plowed under to speed decomposition and death of the bacterium. The use of acid-delinted and fungicide-treated seed, good sanitation, and the use of resistant cultivars lessen crop losses from bacterial blight.

Cotton bacterial blight-*Xanthomonas campestris* pv. *malvacearum*



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Cotton bacterial blight-
Xanthomonas campestris* pv. *malvacearum

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Cotton bacterial blight-
Xanthomonas campestris* pv. *malvacearum

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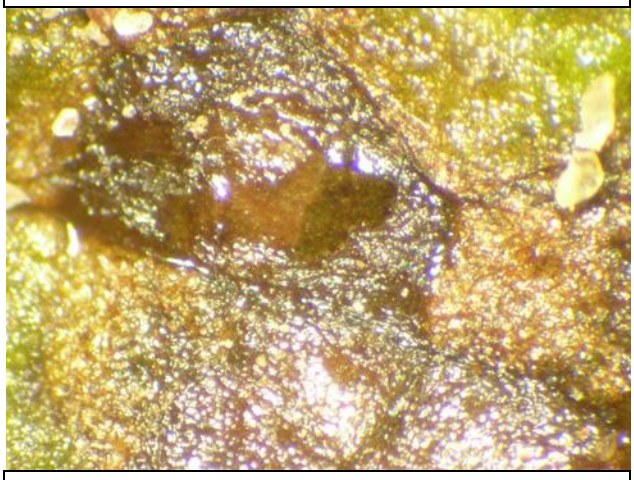
Cotton bacterial blight-
Xanthomonas campestris* pv. *malvacearum
(bacterial oozing from lesion)



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