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Issue 23-August 11, 2009

Arkansas Plant Health Clinic Newsletter

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Corn

Diplodia Ear and Stalk Rot

Weather conditions this growing season have been ideal for corn diseases. Diplodia Ear Rot is most severe when corn follows corn and wet weather occurs shortly after silking. The disease is caused by the fungus, *Stenocarpella maydis*. Symptoms are bleached to straw-colored husks. A conspicuous gray to white mycelial growth may be observed over the entire ear. The growth typically starts at the base of the ear and moves upward. The ear may appear shrunken with the infected kernels glued to the husk by the fungal growth. Late in the season, black pycnidia may be observed on the husks, kernels, cobs, and rotted stalks. *Stenocarpella maydis* is also responsible for an important stalk rot of corn. It can be distinguished from other stalk rots by the presence of sub epidermal, minute, dark brown to black pycnidia in the rind tissue of the lower stem. The two most important methods of reducing the incidence of Diplodia Ear and Stalk Rot are crop rotation and fall tillage of corn residue.

Corn Diplodia Ear Rot- *Stenocarpella maydis*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Corn Diplodia Stalk Rot-
Stenocarpella maydis

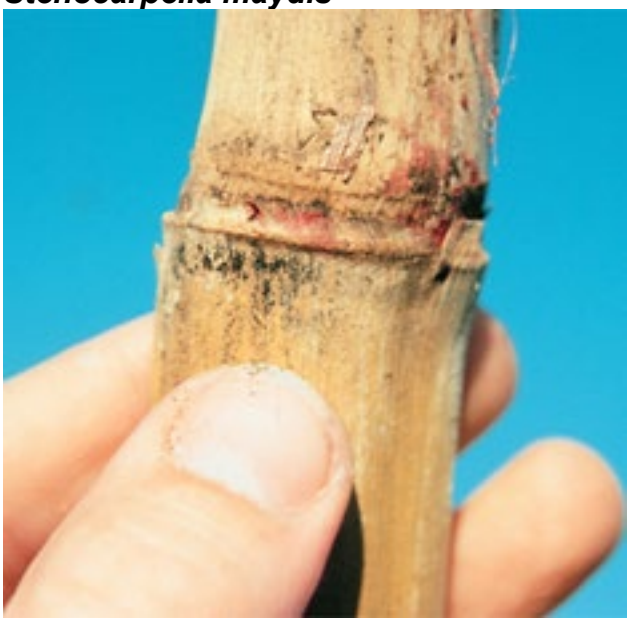

Photo by D.G. White, APS Image Library

Corn Gibberella Stalk Rot

Gibberella Stalk Rot, caused by *Gibberella maydis*, has symptoms that are similar to those of other stalk rots. Plants wilt, the leaves change to a dull green, and lower stalks become straw colored. Red discoloration inside the stalk and disintegration of the pith are diagnostic for Gibberella Stalk Rot.

Corn Gibberella Stalk Rot-
Gibberella maydis

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Corn Charcoal Rot

Charcoal Rot symptoms are similar to other stalk rots. It can be differentiated by the presence of numerous, minute, black sclerotia on the vascular bundles and inside the rind, causing the interior of the stalk to appear gray black. The causal organism is *Macrophomina phaseolina*, the same fungus that causes

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charcoal rot in beans. Root stress related to drought and/or too much water can cause Charcoal Rot.

Corn Charcoal Rot-*Macrophomina phaseolina*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Corn Anthracnose Stalk Rot

Anthracnose Stalk Rot, caused by *Colletotrichum graminicola*, is recognized late in the season by the shiny black color on the outer stalk. The black color may be uniform or blotchy. The stalk can be easily crushed at the point of discoloration. The pathogen may rot several internodes on the stalk. Balanced fertility and good water management reduces the incidence of anthracnose when coupled with cultivars with some resistance.

Corn Anthracnose Stalk Rot-*Colletotrichum graminicola*

Photo by D.G. White, APS Image Library

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Abiotic Red Leaf of Corn

Red leaves and/or red stems with barren stalks may be caused by a broken midrib, or low fertility, dense plant populations, aphid, or herbicide damage, chewed off silks, or poor timing of silking and pollen shed. An accumulation of sugars and other photosynthetic products in leaves and sheaths of barren stalks produces the red coloration.

Corn Red Leaf barren cob-Abiotic

Photo Rebecca Barocco, University of Arkansas Cooperative Extension

Corn Red Leaf-Abiotic

Photo Rebecca Barocco, University of Arkansas Cooperative Extension

Northern Corn Leaf Blight

Northern corn leaf blight is common here in the Mid-South with our warm, humid summers. The disease is caused by *Setosphaeria turnica*, and causes gray-green, elliptical, or cigar-shaped lesions that are 3-15cm long. Mature lesions become tan with distinct dark zones of sporulation. Northern corn leaf blight can develop very rapidly, resulting in complete blighting of the leaves. There are many resistant cultivars to choose from. Cultural controls consist of deep tillage to bury debris, crop rotation, and fungicides where warranted.

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Northern Corn Leaf Blight-
Setosphaeria turnica

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Southern Corn Leaf Blight

Southern Corn Leaf Blight (*Bipolaris maydis*) is not generally regarded as a serious problem as good resistance to the disease is available. However, early heavy infection in a susceptible cultivar can cause severe damage to leaves, predisposing the plant to stalk rot. Spindle shaped tan lesions with rounded ends, and buff to brown borders occasionally with a red tint, appear first on lower leaves. Race O normally attacks leaves only, whereas Race T attacks leaves, leaf sheaths, ear husks, ears, cobs, and stalks. Stalk and leaf sheath infections begin as purple spots that develop tan-gray centers. Control consists of planting resistant varieties, deep tillage to bury debris, crop rotation, and fungicides where warranted. Fungicides such as Tilt are effective against the disease.

Southern Corn Leaf Blight-
Bipolaris maydis

Photo by Sherrie Smith, 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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