

KENTUCKY PEST NEWS

ENTOMOLOGY · PLANT PATHOLOGY · WEED SCIENCE

Online at: www.uky.edu/Agriculture/kpn/kpnhome.htm

Number 1208

August 11, 2009

CORN

-Scout for Diplodia Ear Rot

TOBACCO

-Update on Blue Mold

VEGETABLES

-Vegetable Disease Update

SHADE TREES & ORNAMENTALS

-Bacterial Leaf Scorch Symptoms Are
Appearing

PEST OF HUMANS

- Caterpillars That Pack a Punch

DIAGNOSTIC LAB HIGHLIGHTS

INSECT TRAP COUNT

CORN

Scout for Diplodia Ear Rot

By Paul Vincelli

I've heard early reports that Diplodia ear rot is showing up in some corn fields as they approach maturity. The abundance of wet weather many crops experienced around the silking period would have provided opportunities for infection.

This ear rot appears as white cottony fungal growth between kernels, usually progressing from the ear shank upward and from the cob outward (Fig. 1).



Figure 1. Ears with varying levels of damage from Diplodia ear rot.

Severely affected ears can be obvious from a distance, as the husks turn brown and dry down well before the rest of the plant, although the disease may not be discovered by producers until combining. In most cases, no symptoms appear on the leaves of infected plants.

Key Features of Biology

The Diplodia ear rot fungus survives between seasons in residue of corn stalks, cobs, and fallen kernels. During wet weather, microscopic spores are splashed up to the ear leaf and then deposited by rainwater around the ear shank. These spores can germinate and penetrate the ear shank, growing up into the cob and outward into the kernels. Ears are most susceptible to infection within a week or two of mid-silk (50% of plants with silks). The incidence of affected ears in a field can range from 1-2% to as high as 75-80%.

Management Notes

For The 2009 Crop

Scout corn fields as they mature. Fields with significant levels of Diplodia ear rot should be harvested as soon as possible and dried with heat to below 15.5% moisture (below 13% for storage through the following summer). To avoid contamination of the whole bin, store dried, affected corn separately from healthy corn. Also, maintain a storage facility free of leaks, aerate the

grain regularly, and check regularly for hotspots, musty odors, or other signs of deteriorating grain. Diplodia-affected corn may not store well, so market that grain as soon as possible. Diplodia-affected corn in the U.S. does not appear to contain mycotoxins, and is not regarded as a feeding risk to livestock.

Laboratory confirmation is recommended if there is any uncertainty as to the identity of an ear rot, since several ear rot diseases of corn can be associated with high levels of mycotoxins. The nutritive value of Diplodia-affected corn may be reduced, and some animals refuse the feed. It may be possible to overcome palatability problems by blending it with adequate amounts of normal corn.

For The 2010 Crop and Later

Fields with more than 2-3% of ears with Diplodia ear rot in 2009 should have a management plan implemented.

Rotation can be very important for managing this disease. Any rotation away from corn, even for one year, is helpful in reducing buildup of spores by allowing decomposition of infested corn residues. In fields with moderate to high levels of Diplodia-infested residues, rotations of 2-3 years may be required in order to reduce inoculum to acceptable levels. Recognize, of course, that repeatedly sowing a rotation crop to control Diplodia ear rot may create a different set of pest and disease problems. For example, if soybean is sown for several years in order to reduce inoculum levels of the Diplodia fungus, growers should monitor the pre-plant population of soybean cyst nematode annually.

Tillage practices which partially or completely bury corn residue can provide substantial disease control by reducing spore levels greatly in the field. However, because of soil erosion concerns, many growers may not wish to exercise this option, and may even be restricted from doing so by their soil conservation plan. Deep tillage is not a guarantee against the disease, since some infested residue may still reside on the soil surface. For many farmers, rotation may be the preferred option for dealing with fields where Diplodia ear rot is a significant problem.

No corn hybrid currently on the market has a high level of resistance to Diplodia ear rot. The disease can develop to some extent in any corn hybrid if spore levels are high and weather conditions during silking favor infection. However, hybrids do differ in their level of susceptibility to the fungus. Ask your seed supplier for information on the susceptibility of hybrids to Diplodia ear rot. Note that resistance of a corn hybrid to Diplodia stalk rot does not mean the hybrid has resistance to Diplodia ear rot. These two traits are inherited independently.

Consider planting several hybrids with differing maturities. This spreads the risk from this disease since they won't all be silking simultaneously. Thus, even if an outbreak of Diplodia occurs, some fields may escape the disease.

TOBACCO

Update on Blue Mold

By Kenny Seebold

Thanks to favorable weather during the week of August 3rd, blue mold has continued to spread in central and eastern Kentucky. Since that time, we have confirmed cases in Bracken, Fayette, Mason, and Harrison Counties; we also have suspected cases in Bourbon and Rockcastle Counties. This brings the total to 11 counties in Kentucky, and two in southern Ohio, in which we've found blue mold, and it appears that the disease continues to be active. Increased temperatures and some sunny days may have slowed things down a bit, but forecasted rainfall and periods of overcast weather in the coming week could spell further spread of blue mold in Kentucky and surrounding areas.

As I mentioned in last week's article, growers in areas threatened by blue mold (mainly central and eastern KY at this point), and with susceptible crops in the field should begin application of fungicides as quickly as possible to help protect tobacco and to contain the outbreak. Where active blue mold is present, treatment with Quadris at 12 fl oz/A is the recommended course of action; use 8-10 fl oz/A for protection. Mancozeb (Dithane, Penncozeb, or Manzate) plus dimethomorph (Acrobat or Forum) is another option. Apply 2 lb/A of mancozeb and 3-7

oz/A of dimethomorph (use higher rates on bigger tobacco or if active disease is found). Actigard will probably not be a good choice for tobacco that may have been exposed to the pathogen, since it has to be in place 4-5 days before exposure to the blue mold pathogen to activate plant defenses. However, for late-set crops that have not been exposed, Actigard could be an attractive option for controlling blue mold. It offers the advantages of having a fairly long (10 days) residual period, and is very systemic. The latter part means that using drop nozzles for full coverage is not as critical as for other products. For producers wanting to use Actigard on younger tobacco that has been exposed (or may have been exposed) to the blue mold pathogen, Quadris (or mancozeb + dimethomorph) should be applied first to “clean up” the outbreak. Actigard can then be applied; however, this may not be as effective as when the product is applied before infections have begun.

As mentioned in last week’s article, tobacco that has been topped, or will be topped in a few days, should be less susceptible to blue mold, and may not need an application of fungicide. However, blue mold loves suckers, so good sucker control will be important. Growers at this stage need to look closely at the weather to help guide the decision to treat with fungicides; the presence of later-set tobacco nearby is also another factor that could dictate the need for action.

Good coverage is critical for getting adequate control of disease – this means using an appropriate application volume and drop nozzles to get fungicide materials down into the lower plant canopy. Thus far, blue mold has shown no inclination to slow down, so we need to keep up the pressure with regard to proper use of fungicides. As we get further into the week of August 10, the forecast indicates a trend towards drier and sunnier weather, which should help slow down the blue mold epidemic, and we need the relief!

Please keep a close watch on tobacco in your area, and alert us if you find or suspect blue mold in your area. Check the Kentucky Blue Mold Warning System and on the Kentucky Tobacco Disease Information Page (www.uky.edu/Ag/KPN/kyblue/kyblue.htm) for updates.

VEGETABLES

Vegetable Disease Update

By Kenny Seebold

The epidemic of late blight on tomatoes in Kentucky is slowing somewhat in the eastern part of the state; however, we did confirm the disease in Christian and Logan counties this past week. I am also seeing quite a bit of early blight and also Septoria on tomato around the state. As we’ve discussed in earlier articles, timely application of fungicides is critical (see previous articles, or ID-36 for recommendations) given our current conditions. Please keep a close watch on the late blight situation, and send any suspected cases in to the Plant Disease Diagnostic labs for confirmation; proper identification is a key step in guiding further management recommendations.

Another disease to watch for is downy mildew on cucurbits. We’ve had favorable weather, and a moderate chance of inoculum movement into western Kentucky over the past week. At this stage of the season, producers should be applying a protectant fungicide (chlorothalonil or mancozeb) to cucurbits for downy mildew; these will also suppress powdery mildew. The latter is on the increase from what I’ve seen in my travels. Where powdery mildew is showing up, growers should consider an application of a systemic fungicide such as Nova (also called Rally) or Procure. Please consult ID-36 for rates, and let us know if you find our suspect downy mildew in your area.

SHADE TREES & ORNAMENTALS

Bacterial Leaf Scorch Symptoms Are Appearing

By John Hartman

Bacterial leaf scorch, caused by *Xylella fastidiosa*, has been confirmed in the U.K. Plant Disease Diagnostic Laboratory on pin oak and sycamore samples in recent weeks (Figures 2 & 3). Symptoms of this disease should be appearing now on several species of landscape trees throughout Kentucky. Look for trees showing premature

yellow or brown color from a distance (Figure 4). Leaves of infected trees typically show marginal necrosis (scorch) late in the summer followed by premature defoliation (Figures 5 & 6). Infected trees re-foliate normally in spring and the process of late summer scorch and premature defoliation is repeated. Moist weather this season has reduced tree water stress which, compared to most years, has probably delayed appearance of symptoms in infected trees. Nevertheless, bacterial leaf scorch symptoms are definitely visible on many trees now. The disease begins on one or a few branches and over several years gradually spreads throughout the tree (Figure 7). After many years, dead twigs, then dead branches and limbs begin to appear in the tree (Figure 8) and the condition continues to worsen over the years until the tree needs to be removed. Bacterial leaf scorch is a very problematic plant disease in Kentucky.

Bacterial leaf scorch affects many Kentucky landscape trees including oaks (pin, red, scarlet, shingle, and white) maples (Norway, red, silver, and sugar), planes (American sycamore and London plane) sweetgum, hackberry, elm and mulberry. Oaks are widely planted in Kentucky and the disease is most common in them. Bacterial leaf scorch is not a curable disease, but it can be slowed some with basal root flare injections of antibiotics applied in springtime.



Figure 2. Symptoms of bacterial leaf scorch of pin oak.



Figure 3. Sycamore with bacterial leaf scorch symptoms.



Figure 4. Bacterial leaf scorch-infected pin oak flanked by two green, healthy trees.



Figure 5. Bacterial leaf scorch of English oak.



Figure 6. Bacterial leaf scorch of shingle oak.



Figure 7. Red oak with bacterial leaf scorch. Note that branches in the middle show symptoms while other branches are still green and healthy.



Figure 8. Bacterial leaf scorch-infected pin oak with dead twigs and branches in the top of the tree.

PESTS OF HUMANS

Caterpillars that Pack a Punch

By Lee Townsend



Figure 9. Saddleback caterpillar - top view.

Caterpillars are tasty morsels for predators so many species rely on camouflage to stay off the menu. Those that can protect themselves, stinging caterpillars

for example, stay in plain sight and

advertise with bright or distinctive markings. They are covered with sharp, brittle bristles that break off and stick in the skin like so many cactus spines. Unfortunately, that's not all, the bristles are hollow and contain an irritating substance that produces a very unpleasant skin reaction.

Saddlebacks (picture) are relatively common in Kentucky are among the most venomous species in North America. A full grown caterpillar is brownish red, about 1.25 inches long, and has several distinctive characteristics which include two fleshy horns studded with spines on each end, shorter armed bumps along both sides. The back carries a bright green "blanket" trimmed in white, with brown-to-purple central spot or "saddle", also trimmed in white. Saddlebacks occur on many plants including apple, basswood, cherry, chestnut, dogwood, elm, maple, oak, plum, and even corn. They are most abundant at this time of year.

A brush with a saddleback results in immediate pain followed by swelling and blistering if the spines are not removed. The irritation should be gone in 8 hours or less if the spines are removed. They can be stripped cellophane or adhesive duct tape. Wash the area with soap and water and apply an ice pack to relieve the irritation. Contact a physician immediately if the irritation does not subside or if other symptoms appear.

More information on stinging caterpillars is available in

www.ca.uky.edu/entomology/entfacts/entfactpdf/ef003.pdf

DIAGNOSTIC LAB HIGHLIGHTS

By Julie Beale and Paul Bachi

Recent agronomic samples in the PDDL have included gray leaf spot (Blast) on millet; Lepto leaf spot on alfalfa; Sudden death and potassium deficiency on soybean; Stenocarpella ear rot (Diplodia) on corn; black shank, blue mold, target spot, and weather fleck on tobacco.

On fruit and vegetable samples, we have diagnosed *Cristulariella* and *Pseudocercospora* leaf spots on grape; cedar-apple rust, frog-eye, and scab on apple; brown rot on peach; leaf spot (*Cercospora*) on cherry; anthracnose and leaf spot (*Isariopsis*) on bean; Stewart's wilt on corn; bacterial spot and southern blight on pepper; blight (*Plectosporium*) on pumpkin; early blight, *Fusarium* wilt; *Septoria* leaf spot, leaf mold, leaf spot (*Phoma*), and late blight on tomato; rind necrosis (*Erwinia*) on watermelon.

On ornamentals and turf, we have seen *Phytophthora* on annual vinca; anthracnose on daylily; *Pseudonectria* canker on boxwood; Powdery mildew on dogwood; iron deficiency on maple and oak; *Phytophthora* root/stem rot on St. John's wort; Powdery mildew on tuliptree; take-all patch on bentgrass.

INSECT TRAP COUNT July 31-August 7

Location	Princeton, KY	Lexington, KY
Black cutworm	50	10
Armyworm	66	52
Corn earworm	10	9
European corn borer	0	2
Southwestern corn borer	87	3
Fall armyworm	30	0

Graphs of insect trap counts for the 2009 season are available on the IPM web site at -<http://www.uky.edu/Ag/IPM/ipm.htm>.
View trap counts for Fulton County, Kentucky at -
<http://ces2.ca.uky.edu/fulton/InsectTraps>

