UK COOPERATIVE EXTENSION SERVICE
University of Kentucky – College of Agriculture

LEXINGTON, KY 40546

KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE
On line at: www.uky.edu/Agriculture/kpn/kpnhome.htm

Number 1141 **August 20, 2007**

TOBACCO

DISEASE UPDATE
by Kenny Seebold

Extremely high temperatures were the norm throughout KY during the week of August 13, resulting in conditions that were less-than-favorable for blue mold. No new cases of the disease were reported during this period; however, sporulating lesions were observed in areas where blue mold had been found earlier. These isolated sources of active blue mold pose a minor threat to susceptible crops in the field at this time.

Conditions will continue to be unfavorable, for the most part, to the blue mold pathogen in KY during the week of August 20. Daytime temperatures are forecasted to be in the low-to-mid 90's through August 25, with modest chances of rainfall in the form of scattered showers. Late-set crops awaiting topping could be at risk later in the week as temperatures drop in the day to the mid-80's and night-time temperatures drop to the low 60's. Growers should continue to scout their crops for the presence of blue mold and be prepared to make applications of fungicides if disease-favorable conditions prevail and if the tobacco has not been topped. Refer to ID-160, the 2007 KY Tobacco Production Guide, for recommended disease-control products.

Please be on the lookout for blue mold and let me know if the disease is found in your area. For regular updates on blue mold and other diseases, visit the Kentucky Tobacco Disease Information page online at http://www.uky.edu/Ag/kpn/kyblue/kyblue.htm.

SOYBEAN

CHARCOAL ROT LIKELY TO BE A PROBLEM THIS SEASON
by Don Hershman

With the excessively dry conditions that exist in most parts of the Commonwealth, I believe the odds are quite high that many soybean fields in Kentucky will take a pretty significant yield hit due to charcoal rot. Most fungal diseases of soybean are diminished when hot, dry weather prevails. Charcoal rot, however, is favored by such conditions. The causal fungus, *Macrophomina phaseolina*, is present in all agricultural soils in Kentucky where soybeans are commonly produced. The fungus infects plants at emergence and at the cotyledonary stage, and 80 to 100% of plants can be infected 2 to 3 weeks after planting. These infections remain largely dormant and symptomless unless high temperatures and low soil moisture coincide with plants in the reproductive stages. Charcoal rot is also exacerbated in weakened plants which can result from poor soil fertility and excessive seeding rates. The disease then increases as the stressed soybean plants approach maturity and premature death of affected plants is a common outcome. Yield can be severely compromised by charcoal rot. However, because the disease is most common during drought conditions, most producers attribute low yields in dry years to lack of sufficient soil moisture and do not usually realize that charcoal rot has also taken a toll. Under moderate drought conditions, affected plants usually occur in patches associated with compacted soils or on hills. In a severe drought, large percentages of fields may show evidence of disease.

SYMPTOMS AND SURVIVAL
Plants affected by charcoal rot will show a light gray or silvery discoloration of the
surface tissues of taproots and lower stems. Leaves from infected plants are smaller than normal and plants may wilt and eventually die as symptoms progress. When the surface tissues of lower stems and taproots are removed by scraping with the thumbnail, extremely small, jet-black fungal structures called microsclerotia will be found embedded in the diseased tissue. These structures are usually so numerous that they resemble charcoal dust (or "pepper") and provide the name for the disease. Splitting the taproot often reveals dark gray to blue-black streaks within. Seed may become infected in severe cases, as is evidenced by "blackseed", which is often cracked with embedded microsclerotia.

The fungus survives between seasons as microsclerotia in plant debris or in soil under dry conditions.

CONTROL
Because of the widespread distribution of *M. phaseolina* in Kentucky row crop soils, and due to the near uniform susceptibility of soybean varieties, excellent control of charcoal rot is very difficult to achieve when growing conditions favor infection and subsequent disease development. Genes for tolerance or moderate resistance to charcoal rot have been identified by researchers, and one or more of these may be incorporated into varieties available for planting in some maturity groups. However, few seed companies have good information about charcoal rot tolerance or resistance for the varieties they sell. Still, it is a good idea to ask your seed salesman for that information just in case they have access to it. Rotating affected fields to non-host crops, such as cereals (1-2 years), or to less susceptible crops like corn or grain sorghum (3 years or more), may help reduce charcoal rot by lowering soil populations of micosclerotia (microsclerotia serve both as the infectious and the survival unit).

Escape is perhaps the best way to avoid serious problems with charcoal rot. If irrigation is available, irrigate fields so as to avoid excessive water stress in plants during the reproductive stages. Where irrigation is not possible, it may help to avoid excessive seeding rates and low soil fertility, both of which stress plants and predispose them to charcoal rot. Maintaining soil moisture by planting soybeans no-till, may also help moderate the disease. Finally, it may be possible to avoid charcoal rot using planting date and maturity group combinations that avoid the most common drought period from late-July through August. According to UK grain crops specialist Dr. Jim Herbek, planting a maturity group 2 soybean in late April has the best chances of success in avoiding drought during the R1-R7 reproductive stages. Planting a late maturity soybean late may also work in some years, but the risk of an early freeze makes this option less desirable than the former one.

VEGETABLES

CONTINUING MITE PROBLEMS IN VEGETABLES
by Ric Bessin

With the prolonged hot, dry weather, two-spotted spider mites reports are continue throughout the state. Serious infestations have been reported on tomatoes, vining crops (cucurbits), and, to a lesser extent, peppers. Initial symptoms include stippling of upper leaves followed by bronzing and burning. In some extreme situations, webbing has been reported. Problems are expected to follow the weather, as hot dry conditions favor rapid increase in mite populations. Use of some insecticides that are hard on mite predators may also cause mite populations to flare.

Destruction of weeds adjacent to and in fields should be done in the fall or early spring. Growers should manage weeds around fields carefully during the season. Grass should be mowed regularly. Spraying or mowing of weeds after growth has become rank may increase the movement of mites to cultivated plants. Use of overhead-sprinkler irrigation may provide some short-term relief of mite infestations.

As with aphids, mark infestations with flags, and check them again every 3 or 4 days. Mites can easily be moved to infested plants on clothing, so always examine infested areas last during inspections. Because mites usually occur on the undersides of leaves, applications of contact miticides need to be directed at both the lower and upper leaf surfaces.

The commercial vegetable spray guide lists a number of miticides for many of the vegetable crops. Several of the miticides such as Agrimek, Acramite, and Oberon are quite expensive, but these can provide extended control. There are also pyrethroid insecticides such as Capture and Danitol that have activity against mites at the higher end of their labeled rates. As they are cheaper and tend to have less residual control, the pyrethroid miticides are often used at the end of the season when shorter term relief is targeted.

THRIPS ON VEGETABLES
by Ric Bessin

High levels of flower thrips continue to be a problem on some vegetable crops. One field in western KY had high levels feeding on mature tomato fruits causing irregular

clusters of golden stipples on the surface. In addition to fruit damage, western flower thrips can transmit two serious viruses of vegetables, tomato spotted wilt virus and impatiens necrotic spot virus. However, in order to transmit the viruses, the immature thrips needs to acquire the virus from an infected plant, then can transmit the virus to uninfected plants as an adult.

The best method to sample for thrips is to tap leaves, buds, or flowers of suspected plants over a sheet of white paper. Thrips are much easier to see on the paper than they are on the plant. The commercial vegetable spray guide, ID-36, lists insecticides for mite management, however, some mite species are more easily control with some of these products than other species.

STINK BUG DAMAGE TO PEPPERS COMMON
by Ric Bessin

There has been an unusually high levels of stink bug damage to pepper fruit. Stink bug damage to pepper is very similar to that on tomato. Stink bug feeding causes a light colored corky area just underneath the skin of the fruit. These damaged areas are visible through the skin.

Generally, stink bug numbers and their damage on various crops are up this year across the state. Damage was common early in the season on corn. The same species of stink bugs, the brown and green stink bugs, attack peppers, with the brown being more difficult to control. There has also been similar reports of stink bug damage to tomatoes. Stink bug damage to tomatoes picked in the breaker stage is not readily discernable.

Adult stink bugs migrate from weedy areas into pepper fields, particularly when the weedy plants begin to decline. Continual weed management throughout the season around fields helps to reduce stink bug immigration into fields. In terms of insecticidal control, endosulfan (Thionex, Endosulfan) and the pyrethroid insecticides (Ambush, Asana, Baythroid, Pounce, Proaxis, Warrior) are the most effective insecticides registered for peppers against stink bugs, but they provide only fair to good control of stink bugs. When scouting peppers for stink bugs and their damage in order to make control decisions, keep in mind that the presence of fruit damage does not mean that stink bugs are necessarily still active.

SHADE TREES & ORNAMENTALS

OAK BACTERIAL LEAF SCORCH AFFECTED BY DROUGHT
by John Hartman

Leaf scorch symptoms caused by bacterial leaf scorch disease have been visible in Kentucky Urban Forests for nearly the past month. The extent of disease incidence within different oak trees may include a single scorched leaf, one or a few twigs or branches affected, or trees with 90% scorched leaves. Each summer, symptoms typically appear first on chronically-infected oaks, some of which are already declining from many years of leaf scorch disease. Red and sugar maples are also showing symptoms now.

This summer has been one of extreme drought and most of the trees in central Kentucky, as well as those in other regions statewide are showing stress related to the dry weather. In many urban neighborhoods where pin oaks have predominated, the simultaneous occurrence of bacterial leaf scorch (*Xylella fastidiosa*) and drought shows diseased pin oaks at their worst.

Symptoms of bacterial leaf scorch, this chronic and eventually fatal disease, are most noticeable in the late summer and fall, and the disease is often overlooked at other times of the year when disease symptoms are not readily noticed. In late summer, leaves of healthy trees are still green. They stand in obvious contrast to the browning and falling foliage of diseased trees. Some recently infected trees have some limbs with green foliage and others with brown foliage. Infected trees are gradually debilitated however, as over the years, twigs, branches, and limbs begin to die.

Many of our urban pin oaks are showing branch dieback typical of trees that have been infected for 5 or more years. Unfortunately for the trees, the disease is made worse by the drought, so they look worse than usual this year. Bacterial leaf scorch disease does not spread rapidly - indeed some of the pin oaks in many neighborhoods appear to be uninfected, as yet. There is no cure for bacterial leaf scorch, so one should expect diseased trees to be gradually lost over the years. In the meantime, newly infected trees can be made to look somewhat presentable for a few more years if the dead wood is pruned out.

The best remedy for bacterial leaf scorch is tree replacement. To maintain species diversity, avoid planting all the same species in each neighborhood. Choose trees that do well in Kentucky such as those listed in the three U.K. Cooperative Extension Service publications *Small Trees for Urban Spaces in Kentucky*, *Medium-Sized Trees for Kentucky*

Landscapes, and *Large Trees, the Giants of Kentucky's Landscape*, which are available at County Extension Offices. When replanting, it is not necessary to use large transplants. Often, smaller nursery stock becomes established more quickly than larger nursery stock so that ten years later, their relative sizes might not be much different. In all cases, during the several years following tree planting, make provisions for watering the trees regularly, applying mulch periodically, and pruning trees correctly so that good, strong, branch structure is established when the trees are young. During dry seasons such as this one, all trees, not just the newly planted ones will need regular watering.

DIAGNOSTIC LAB-HIGHLIGHTS

by Julie Beale and Paul Bachi

Agronomic samples over the past week included Fusarium wilt on soybean; gray leaf spot on corn; summer black stem on alfalfa; and black shank, blue mold and Fusarium wilt on tobacco.

On fruit and vegetable samples we have diagnosed cedar-apple rust on apple; fire blight on pear; black knot on plum; bacterial soft rot on cabbage; powdery mildew on pumpkin; common rust on corn; and early blight on tomato.

On ornamentals and turf we have seen Botryosphaeria canker on rhododendron; bacterial leaf spot on ivy; anthracnose on peony; Rhizoctonia stem rot on petunia; Septoria leaf spot, Rhizoctonia root rot, and southern blight on rudbeckia; powdery mildew on sedum; rust and Cercospora leaf spot on hydrangea; Rhizoctonia root/stem rot on phlox; bacterial leaf scorch on oak and maple; Bipolaris root rot on bermudagrass; summer patch on bluegrass; brown patch on fescue; gray leaf spot on perennial ryegrass; and Rhizoctonia root rot on bentgrass.

TRAP COUNTS

UKREC, Princeton KY

Kentucky — Tennessee

August 10-17, 2007

►Jackson, TN

Black cutworm	0
True armyworm	0
Corn earworm	0
European corn borer	-
Southwestern corn borer	30
Fall armyworm	0

►Milan, TN

Black cutworm	0
True armyworm	0
Corn earworm	0
European corn borer	6
Southwestern corn borer	10
Fall armyworm	0

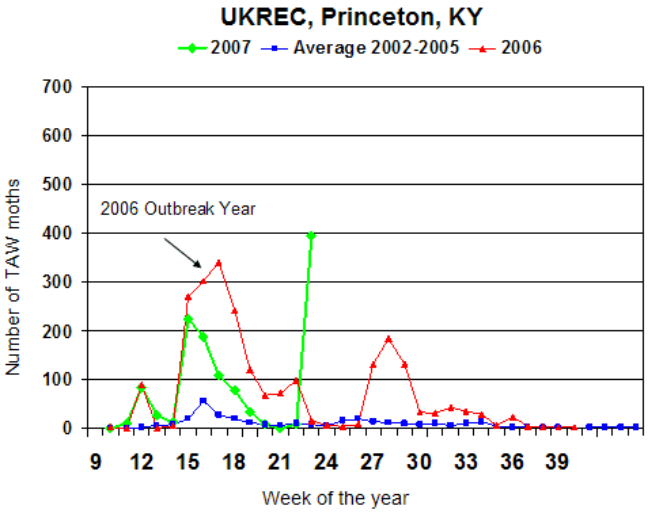
►Princeton, KY

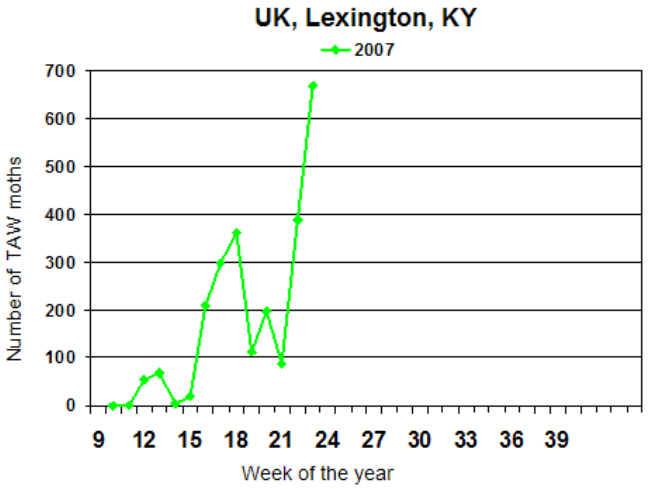
Black cutworm	57
True armyworm	57
Corn earworm	202
European corn borer	0
Southwestern corn borer	7
Fall armyworm	3

►Lexington, KY

Black cutworm	161
True armyworm	302
Corn earworm	684
European corn borer	4
Southwestern corn borer	1
Fall armyworm	9

This season insect trap counts will be provided for locations in Kentucky and Tennessee.
View trap counts for past seasons and the entire 2007 season at –
http://www.uky.edu/Ag/IPMPrinceton/Counts/2006trapsfp.htm
View trap counts for Fulton County, Kentucky at -
http://ces.ca.uky.edu/fulton/anr/
For information on trap counts in southern Illinois visit the Hines Report at –
http://www.ipm.uiuc.edu/pubs/hines_report/comments.html
The Hines Report is posted weekly by Ron Hines, Senior Research Specialist, at the
University of Illinois Dixon Springs Agricultural Center.


UKREC, Princeton, KY
2007
Average 2002-2005
2006
700
600
500
400
300
200
100
0
2006 Outbreak Year
Number of TAW moths
9
12
15
18
21
24
27
30
33
36
39
Week of the year


UK, Lexington, KY
2007
700
600
500
400
300
200
100
0
Number of TAW moths
9
12
15
18
21
24
27
30
33
36
39
Week of the year