

KENTUCKY PEST NEWS

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TOBACCO

BLUE MOLD REPORTED ON TOBACCO IN FLORIDA AND VIRGINIA

by Kenny Seebold

New reports of blue mold were received June 10 and June 16 from VA and FL, respectively. The case from VA was isolated to a greenhouse, while that from FL occurred in a 10-acre field. Blue mold had been found near Gainesville, FL back in March, and the recent report appears to be connected to the initial outbreak.

The North American Plant Disease Forecast Center predicted movement of blue mold spores from the two known sources of the disease in south GA across eastern, central, and northern KY on June 12 and 13. The risk of disease development was believed to be weak-to-moderate; however, it is clear that we need to begin scouting for blue mold in earnest in the areas that may have received inoculum. The forecasted weather over the next few days calls for cooler temperatures and chances of rain – conditions in some parts of KY could become ideal for the development and spread of blue mold.

For more information on the status of blue mold in the US and recommended controls, visit the Kentucky Tobacco Disease Information Page online or contact your local Cooperative Extension office.

FIRST REPORTS OF BLACK SHANK ON BURLEY

by Kenny Seebold

The first few cases of black shank trickled into our diagnostic labs this past week. Soil moisture and warm temperatures over the past few weeks have been particularly favorable for the black shank pathogen, *Phytophthora nicotianae*. The incidence of black shank across KY will continue to increase in the coming weeks.

To be successful against black shank, control measures must be put in place before tobacco is set in the ground. Along with careful sanitary practices and crop rotation (2 or more years out of tobacco after a tobacco crop), producers should utilize varieties with the highest resistance available to both races of *P. nicotianae* in fields with a history of moderate-to-severe black shank or where less-than-optimal rotations have been employed. Pre-plant applications of mefenoxam (Ridomil Gold SL at 1 pt/A or Ultra Flourish at 1 qt/A) can be made to provide additional protection against black shank and are recommended where the risk from black shank is moderate-to-high; follow up applications can be made at 1st cultivation and at layby for full-season suppression of black shank.

What fungicide options are available to the producer who did not put down mefenoxam prior to setting? Syngenta Crop Protection recently released Ridomil Gold SL, which has replaced the EC formulation of this product. The label for the SL formulation of Ridomil Gold differs from that of

the EC in that applications of the fungicide are now permitted at 1st cultivation and layby even if a pre-plant application was not made. Thus, Ridomil Gold SL can be used in situations where black shank appears after setting. These “rescue” applications will be most effective if a variety with moderate-to-high levels of resistance has been planted, such as ‘TN 86’, ‘TN 90’, or ‘KT 204’. The rate for Ridomil Gold is 1 to 2 pt/A if the fungicide will be applied at 1st cultivation only; two treatments at 1 pt/A each can also be made at 1st cultivation and layby. Applications should be directed at the soil and stems of plants for best control of black shank. The fungicide should be incorporated as quickly after application as possible, either mechanically or by irrigation (natural rainfall or overhead irrigation). Soils need adequate levels of moisture to activate mefenoxam and permit its uptake into the plant. Secondary spread of black shank is considerably more likely in rainy weather than in dry years. Heavy rains or irrigation could result in severe losses to black shank in fields with even low levels of disease, so mefenoxam should be applied in advance of anticipated moisture events. The black shank pathogen can be moved easily on equipment and feet! Growers need to sanitize properly when moving between infested and clean fields.

CORN

EUROPEAN CORN BORER AND CORN PRICES HEAT UP

by Ric Bessin

As the summer begins to heat up, so does the insect pressure in corn as well as the corn market. One important consideration is the effect that grain price of \$7 plus per bushel has on corn borer thresholds. At the same time, we received a few reports this year of corn borer infestations in non-Bt, early-planted corn in the western and central regions of the state. This upswing follows a couple of years where there has been little activity.

Corn producers should monitor fields for this pest weekly and use the following table to make control decisions.

Growth stage	Percentage infested plants				
	40%	50%	60%	70%	80%
Early whorl	4.9	6.5	8.3	10.3	12.6
Late whorl	3.9	5.2	6.6	8.3	10.1
Pretassel	5.9	5.2	10.0	12.4	15.0
Pollen shed	3.9	5.2	6.6	8.3	10.1
Kernels initiated	2.7	3.6	4.5	5.6	6.9

This table allows the use of

- % infested plants found by field scouting
- anticipated yield from the field (bu/a)
- crop value (\$/bu)
- the control cost (\$/a for insecticide + application cost) to make control decisions.

With the exceptionally strong grain market, thresholds holds for treatment will be very low. For example, a field that may be expected yield 150 bu per acre at \$7 per bu. If the cost of treatment for corn borers runs \$12 per acre, then the grower would need to prevent only a 1.14 % yield loss to break even. While all Bt corn borer hybrids are highly resistant to attack by European corn borer, producers may need to monitor refuge areas, particularly if these were planted early.

FORAGES

DARKLING / MEALWORM BEETLES AND STRAW ITCH MITES

by Lee Townsend

Finding dark beetles in hay or feed raises an immediate red flag, especially for horse owners. Are they blister beetles? If not, what are they and are they harmful?



Several samples found recently in hay and feed have been adult darkling beetles, also called mealworm beetles, a reference to the wireworm-like larval stage that is sold as fish bait.

Different species have elongate brown to black bodies that range from ½ to ¾ inch long. The front wings are hard compared to softer, flexible front wings of blister beetles. The darkling beetle head is distinctly narrower than the segment immediately behind it. In contrast, the head of a blister beetle is wider than the segment behind it so the insect appears to have a narrow “neck”.

Darkling beetles and their larvae feed on broken seeds and fines in grass hay and pasture fields. They also commonly infest ground corn and feed and may scavenge on other organic matter. Adults and mature larvae may wander some distance from infested hay or feed so it can be hard to find the source of the infestation, which can be stored or spilled feed or hay.

Sanitation is the key to dealing with mealworm beetles but it can be difficult to find and eliminate all breeding

sites of these insects. Fortunately, their development is relatively slow so it takes time for large numbers to develop.

Straw itch mites are only 6 to 9/1,000 inch long but the memory of an encounter with them can last a lifetime. Proteins, injected as the mites attempt to feed, can cause moderate to severe skin reactions and itching that usually appears from 2 to 12 hours after exposure; by then the mites are often gone. Reactions can include lesions and small, solid, raised areas that may have white tops. They most often occur on the back, abdomen, and around the waist. The lesions disappear in a few days, with or without therapy. Severe reactions in some individuals can include fever and vomiting.

Oral antihistamines and topical anti-itch creams have been reported to be useful in alleviating the discomfort caused by the bites. In most cases the bites clear in one to two weeks. Persons with prolonged discomfort should see a physician.

These tiny mites can live in pasture grasses where they feed as external parasites on caterpillars, beetle larvae, and other small arthropods. Their numbers are greatest in years where weather conditions favor a wide range of insects. That means more food for the mites and more offspring are produced. Itch mites also can live in some dried foodstuffs - especially cereals.

Human encounters result from handling hay or just spending time in tall unmowed grassy areas. People handling square bale hay can unknowingly pick up and get bitten by the mites present in curing hay. Also people picking up a few bales to mulch gardens or yards, make decorative Halloween displays, etc. can find themselves itch mite victims. There have been instances of equine dermatitis when horses were given mite-infested hay.

There is no way to evaluate bales for the presence or absence of mites and no good control alternatives for mites in infested bales. A temperature of 140 degrees F for a few hours should kill many but that temperature would have to reach the core of the bale.

Humans may gain some protection by application of a repellent, such as DEET, and a thorough washing with soap and water immediately after possible exposure.

FRUIT CROPS

TAPHRINA-CAUSED DISEASES ACTIVE THIS SPRING

See Shade Trees & Ornamentals

SOYBEANS

THRIPS (AND AN APHID) ON SOYBEAN by Doug Johnson

A number of soybean fields in western Kentucky are infested with large numbers of thrips. Young thrips, their "tar spot" excrement, and feeding damage are relatively easy to see. Some individual leaflets are infested with up to 15 thrips. Although there are large numbers on some plants, the distribution is not at all even, though the pest is wide spread. The samples that I have seen indicate that there are fewer thrips on the newly emerged leaves. A good rainfall will allow the plants to increase in size rapidly and they should outgrow the problem. There is little information to indicate that thrips have much of an effect on yield and no such information exists for Kentucky. Most of the states in our region indicate that treating for thrips is warranted only if plants are dying and thus the stand is being reduced. Soybean has an almost remarkable ability to compensate for insect damage. The most liberal threshold indicates that treatment may be warranted if there are eight (8) thrips on each leaf on all plants sampled.

There is a story circulating in the Kentucky agricultural community that thrips on soybeans can move to tobacco and kill the tobacco. This is INCORRECT. The thrips common to soybean are soybean thrips, *Sericothrips variabilis* and the flower thrips *Frankliniella tritici*. The major thrips related problem on tobacco is a disease called tomato spotted wilt. This disease state is caused by a virus which is moved by the western flower thrips, *Frankliniella occidentalis*. The thrips on soybean is not the same thrips found on tobacco.

A single juvenile aphid was found while examining soybean plants from Graves Co. KY for thrips damage. Unfortunately, the aphid was damaged in handling so an absolute identification can not be made. The aphid certainly appears to be a soybean aphid but the cotton aphid can not be absolutely ruled out.

Historically, soybean aphid has been found in all of the soybean production area of Kentucky, but so far, populations have not been of any economic importance. Given the progression of the season thus far, I do not expect for this year to be any different. However, producers, consultants etc. are advised to watch for them. Under favorable growing conditions aphid populations can increase very rapidly. Keep an eye open for these pests.

LAWN & TURF

USEFUL PUBLICATION ON TURF DISEASES FOR THE FRUGAL TURF MANAGER by Paul Vincelli

The University of Missouri (UM) Extension Service recently produced a very useful publication on turfgrass diseases, called *Identification and Management of Turfgrass Diseases* (IPM 1029). The publication was led by Dr. Barb Corwin, a turfgrass pathologist at UM for many years before moving into private consulting at Turfgrass Diagnostics L.L.C. Drs. Ned Tisserat (Colorado State University) and Brad Fresenburg (UM Division of Plant Sciences) are also coauthors.

The publication has useful sections on the fundamental concepts of plant pathology, tips on diagnosis, cultural practices for turf disease control, and proper use and application of fungicides. In addition to these, however, this publication has excellent sections that describe 21 individual diseases. Each section describes symptoms and signs of the disease, conditions that favor the disease, and management. These sections include wonderful glossy color images showing symptoms (and sometimes microscopic events).

The really great thing about this booklet is the cost. It is freely downloadable by pointing your web browser to: <http://extension.missouri.edu/explore/agguides/pests/ipm1029.htm>. However, for only \$3.00 apiece, the booklet can be purchased in a printed form, complete with glossy color images. That's not a typo—it's \$3.00, not \$30.00 (US currency). Printed copies can be ordered by going to the same website.

SHADE TREES & ORNAMENTALS, FRUIT CROPS

TAPHRINA-CAUSED DISEASES ACTIVE THIS SPRING by John Hartman

Leaf curl and leaf blister diseases of fruits and landscape plants caused by the fungus *Taphrina* have been active this spring. At a recent fruit growers' meeting in central Kentucky peach leaf curl was very evident on many cultivars of young peach trees. Neighborhoods with oaks, especially red oaks are showing widespread symptoms of oak leaf blister. Some of the students in our plant disease diagnosis class recently identified leaf curl occurring on shining sumac. Plum pockets, observed in past

years, has not been reported in Kentucky yet this year, but perhaps that will change in the coming weeks.

Peach leaf curl, caused by the fungus *Taphrina deformans* occurs on peaches, apricots, and nectarines in Kentucky commercial orchards as well as in home landscapes. Peach leaf curl is easily recognized in late spring by the thickened, folded, puckered, and curled leaf blades. These symptoms may be present on the entire leaf or just on parts of the leaf. Infected leaves or parts of leaves soon acquire a red or purplish coloration, making them especially conspicuous. In some cases, nearly every leaf on a tree may be infected. The diseased areas develop a powdery gray coating (fungal spores) and leaves may then turn brown, wither, and drop from the tree. Yearly defoliation resulting from peach leaf curl can seriously weaken the trees. Trees free of disease will bear better crops and withstand other diseases and environmental stresses more successfully.

Sumac leaf curl, caused by the fungus *Taphrina purpurescens* was found on shining sumac (*Rhus copallina*). Symptoms are quite similar to those of peach leaf curl. Thickened, folded, puckered, blistered and curled leaf blades accompanied by red coloration of affected tissues are the obvious symptoms of this disease.

Oak leaf blister, caused by the fungus *Taphrina caerulescens*, affects many different species of oaks in Kentucky. Leaf blisters appear in late spring as 1/4-1/2 inch circular light green bulges or blisters on the top surface of leaves. From the underside, the affected areas are sunken or depressed. These distortions may cause leaf bending or curling of narrow-leaves species such as willow oak. These blisters may resemble leaf galls caused by insects; however, insect galls typically do not show a depression on the lower leaf surface. As the blisters age, they become dry, brown spots; severely diseased leaves may drop prematurely.

Plum pockets, caused by the fungus *Taphrina communis*, occurs on plums and may also be present in Kentucky this spring. Plum pockets symptoms are very obvious; infected fruit become distorted and much enlarged. With spongy or hollow centers, these malformed fruits are sometimes referred to as

“bladder plums,” “mock plums,” or “plum pockets.” Deformed fruits eventually turn brown or black and fall from the tree. Leaves and tips of plum pockets-infected shoots appear swollen and are often twisted and curled.

There are many other species of *Taphrina* and several different Kentucky landscape hosts may be affected including alder, birch, elm, hornbeam, maple, poplar and prunus.

Disease spread. Spores produced on infected leaves during the spring and summer are spread to other plants by wind and rain. Spores of the fungus, in a different form, become lodged under the bud scales and rough bark. The fungus remains there throughout the summer and winter months until the next spring infection period. In spring, when buds begin to swell, germinating spores of the fungus penetrate and infect the developing leaves, causing leaf curl or leaf blister symptoms to appear some weeks later. Twig and fruit infection can also occur; fully expanded leaves are not susceptible. *Taphrina*-caused diseases are more severe when early spring weather is cool and wet as it was during April and May in Kentucky this spring.

Disease management. To control *Taphrina*-caused diseases such as peach leaf curl and plum pockets, a single fungicide application needs to be made during the dormant season before buds swell in spring. Late fall, after leaf drop is usually a better time to spray for leaf curl or plum pockets because the weather is dry and it is easier to move equipment through the orchard. In addition, peach and plum buds sometimes begin to swell during mid-winter thaws leaving the grower no chance to control the disease in early spring. Fungicides will not control peach leaf curl or plum pockets once buds begin to swell in spring and infection has occurred.

On fruit crops, the choice of fungicides for dormant sprays include chlorothalonil (Bravo); ferbam (Carbamate); Ziram; or fixed copper fungicides such as copper hydroxide (Kocide), copper oxychloride (COCS), or Bordeaux mixture. Thorough coverage of the twigs and branches is essential. For further information on stone fruit disease management, consult U.K. Cooperative Extension publication ID-92, *2008 Commercial Tree Fruit Spray Guide*, available from County Extension Offices statewide.

For diseases such as oak leaf blister, the disease does not seriously harm healthy trees and control with fungicides is not usually recommended. On particularly sensitive trees, however, a single dormant application of a fungicide containing chlorothalonil or maneb, or combination products such as Manhandle, Spectro, or Stature may be helpful.

CALICO SCALE ALERT

by Mike Potter and Dan Potter

In recent years, calico scales have become rampant on several landscape plants, including honeylocust, hawthorn, hackberry, sweet gum, yellowwood, dogwood, flowering crabapple, and sugar and Norway maples. Infestations are so heavy in some cases that entire twigs and stems are covered by the scales and the trees are in decline.

Mature calico scales, *Eulecanium cerasorum*, are large, black and white globular-looking insects about the size of a pencil eraser. They have a soft, leathery body and when crushed ooze a gummy, wax-like fluid. The immobile, adult female is the life stage observed during the spring, attached to twigs and stems. Some people mistake them for ladybugs, which are roughly the same size. Like other scale insects, the calico scale feeds by sucking plant juices. Heavy infestations can cause premature leaf drop, branch dieback and, coupled with other stresses, eventual tree death.

The mature females are now dying. Underneath them are thousands of eggs which have begun hatching into crawlers. The crawler stage prefers to suck plant juices from the leaves (further stressing the plant), and also excretes copious amounts of honeydew. The sticky honeydew and resultant sooty mold are cosmetically unappealing and can stain patios and car finishes, and attract wasps and other nuisance pests. Another reason to take action against the crawlers is that they can become wind borne, spreading the infestation to other trees nearby.

Management

It's too late to impact the mature females, which turn brown and die just before crawler hatch. *However, the underlying eggs have hatched, and the crawlers are settling on the leaves.* The yellowish, newly-hatched crawlers are tiny, but under close inspection their movement will be visible to the naked eye.

Insecticide applications, timed to coincide with emergence of young crawlers, will break the cycle of development

and help alleviate further plant stress. The most effective insecticides for crawler control are pyrethroids such as TalstarOne, Tempo(= Bayer Advanced Lawn & Garden Multi Insect Killer), and Scimitar (= Spectracide Triazicide). Sevin also can be used. So-so control of crawlers can also be achieved with 2% horticultural oil or insecticidal soaps. Thorough coverage of infested twigs, branches and adjoining leaves is important. The hatching period lasts several weeks so a second application 2 to 3 weeks after the first may provide more complete control.

Calico scales overwinter on the bark as mid-sized nymphs. To further reduce the likelihood of problems occurring next year, it may help to follow up with a dormant oil application in fall or winter to trees that were heavily infested with calico scales this year.

BORERS ARE FLYING

by Mike Potter

Four serious pests of landscape trees – dogwood borer, bronze birch borer, flatheaded appletree borer, and honeylocust borer – are flying. The dogwood borer is the most serious pest of ornamental dogwoods, especially stressed trees in full sun. The bronze birch borer is a severe pest of European white or paper birch, especially cultivated trees under stress. Flatheaded appletree borers are major pests of red maples, hawthorns, flowering crabapple, and several other hardwoods, especially those which are newly transplanted or under stress. Honeylocust borers are serious pests of transplanted and established urban trees with limited root zones. Mated females of all four species fly to host trees and lay eggs on the bark.

Management -- Borers rarely injure healthy trees or shrubs growing in their natural environments. When transplanted into landscape settings, every effort should be made to minimize plant stresses such as drought, soil compaction, sun scald, lawn mower/weed trimmer injuries, etc. Because newly planted trees are under considerable stress, preventive sprays are advisable during the first 2-3 growing seasons after planting. Proper timing is important in order to have a lethal residue of insecticide on the bark to intercept newly-hatched larvae before they burrow into the tree. *If you haven't already done so, now is the time to apply protectant sprays for all four species.* Astro (permethrin) and Onyx (bifenthrin) are effective. Susceptible trees should be sprayed to runoff on the trunk and main scaffold limbs. A second application, three weeks after the first, provides extended protection.

For further information, see entomology extension publication, ENT-43: *Insect Borers of Trees and Shrubs*.

DIAGNOSTIC LAB-HIGHLIGHTS

by Julie Beale and Paul Bachi

During the past week, the PDDL received samples of magnesium, phosphorus and zinc deficiencies on corn; sharp eyespot on wheat; black shank, target spot, Pythium root rot, transplant shock and potassium deficiency on tobacco.

On fruits and vegetables, we diagnosed Phytophthora root rot on blueberry; fire blight, cedar-apple rust and frog-eye leaf spot on apple; leaf curl disease and sunscald on peach; plum pockets and black knot on plum; southern blight on pepper; bacterial spot, Pythium root rot, Sclerotinia stem rot, tobacco mosaic virus and blossom end rot on tomato.

On ornamentals and turf, we have seen Rhizoctonia stem rot on petunia; leaf streak on daylily; Phytophthora crown rot on hosta; lacebug injury on azalea; bacterial spot on hydrangea; scab on crabapple; fire blight on pear; anthracnose on ash and maple; leaf blister (*Taphrina* sp.) on oak and sumac; dollar spot and brown patch on fescue.

INSECT TRAP COUNTS

June 6-13, 2008

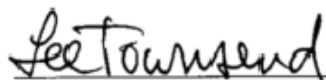
► Princeton, KY

Black cutworm	7
True armyworm.....	4
Corn earworm.....	73
European corn borer	0
Southwestern corn borer	0
Fall armyworm.....	0

► Lexington, KY

Black cutworm	49
True armyworm.....	270
Corn earworm.....	140
European corn borer	07
Southwestern corn borer	0
Fall armyworm.....	0

Graphs of insect trap counts 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://ces.ca.uky.edu/fulton/anr/>


Lee Townsend, Extension Entomologist

NOTE: Trade names are used to simplify the information presented in this newsletter. No endorsement by the Cooperative Extension Service is intended, nor is criticism implied of similar products that are not named.

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