



KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • AGRONOMY

On line at - <http://www.uky.edu/Agriculture/kpn/kpnhome.htm>

Number 855

July 12, 1999

<p>TOBACCO</p> <ul style="list-style-type: none">• Current blue mold status <p>CORN</p> <ul style="list-style-type: none">• Corn borers flying <p>SOYBEANS</p> <ul style="list-style-type: none">• Japanese beetle in soybean, again! <p>VEGETABLES</p> <ul style="list-style-type: none">• The bugs of summer• Coping with accidental applications	<p>LAWN & TURF</p> <ul style="list-style-type: none">• Gray leaf spot update <p>SHADE TREES & ORNAMENTALS</p> <ul style="list-style-type: none">• A strobilurin fungicide with a broad label for landscape plants <p>HOUSEHOLD</p> <ul style="list-style-type: none">• Foreign grain beetle alert <p>DIAGNOSTIC LAB - HIGHLIGHTS</p> <p>INSECT TRAP COUNT</p>
---	---

TOBACCO

CURRENT BLUE MOLD STATUS

by William Nesmith

A BLUE MOLD ADVISORY REMAINS IN PLACE STATEWIDE, with WATCHES/WARNINGS for large areas of the Commonwealth. ADVISORIES HAVE ALSO BEEN ISSUED FOR SOUTHERN INDIANA, SOUTHERN OHIO AND WESTERN WEST VIRGINIA. The sudden emergence of damaging levels of disease over a large area of the state/region is still unlikely at this time, but very strong activity in individual fields is possible. Protective fungicide sprays are needed in communities under watches or warnings. Blue mold could "explode" in some communities where it has remained active through the hotter weather, with a return to the cooler temperatures, especially where adequate moisture is present as fog, light rain, or irrigation. Temperatures are ideal for blue mold development, it is the absence of leaf moisture that will be limiting disease development in most areas during this week.

The wet weather events of the past weekend should have provided new sporulation and infection events in all areas where the disease is active. However, the hot weather experienced last week slowed development, greatly reducing the amount of new

inoculum (spores) that was being produced on Friday and Saturday nights from active lesions. Movement of airborne spores should have been mainly northeast, but spore movement from northeast to southwest was possible on Sunday night and Monday morning. This could have introduced new spores into several areas, such as the Lake Cumberland and Lincoln Trail Extension Areas from activity in northern and eastern Kentucky.

Where new infections occurred during the weekend and early this week, lesion development will be favored by the cool weather. Expect large foliar lesions and systemic vein strikes, especially in lush tobacco. Such lesions will produce massive spore loads by mid week where the leaf is wet at night.

Dry foliage will limit infection and sporulation during this week, however, because the dew point is not being reached in most areas due to the very dry air mass established in the state. Dry air seriously limits blue mold development, because it greatly reduces new sporulation and new infections. Areas of the state that are NOT experiencing dry air, or fields being irrigated or with fog, may have a much different situation and be much more prone to damaging levels of blue mold.

The level of blue mold activity remains highly variable about the state, even in communities with

active cases. County Extension Offices will be the best source of information on the status of blue mold within communities. Because of the cool weather, County Agents will need to carefully access the sporulation and new lesion development late this week in order to predict the disease potential for next week.

Susceptibility of tobacco leaf tissues remains highly variable from field to field and even within fields. Some of the crop is mature enough (post topping) to have low susceptibility, while many crops are growing too poorly from root diseases and drought conditions to experience damaging levels of blue mold. Especially vulnerable are fields of very rapidly growing tobacco with ground suckers and wet soil, where the canopy has closed (either between plants or between rows), located in regions that experienced extensive cloud cover, haze and nightly fogs over the past two weeks. Communities that have active blue mold are those to most likely experience strong disease development.

Status reports by Extension Area or state/region are as follows.

PURCHASE AREA of far western Kentucky: Blue mold has not been reported from this area, but an advisory remains.

PENNYRILE AREA of western Kentucky: A watch exists for all counties, with a warning for Christian and Trigg counties, where it is active. The disease continues nearby in Robertson and Montgomery counties of northern western Tennessee based on recent phone calls.

GREEN RIVER AREA of northwestern Kentucky: A watch exists for the area, with a Warning for Daviess County where the disease is active, especially on the eastern side of the county. This blue mold is also threatening portions of the Lincoln Trail Extension Area and southern Indiana.

MAMMOTH CAVE AREA of southwestern/south central Kentucky: Blue mold has not been reported from this area, but the advisory remains. Logan County is under a watch due to the activity in neighboring counties of Kentucky and Tennessee.

LAKE CUMBERLAND AREA of southern Kentucky: An advisory remains for the area with a warning for Pulaski County, which has a single confirmed cases. Blue mold spores may have been moved into this areas from eastern Kentucky on Monday morning, so areas that received rain on Monday morning should consider the increased potential. Tennessee reported blue mold from Smith County, which is located in central, middle

Tennessee, and is in line with new developments in Pulaski and Lincoln counties of Kentucky, so more activity than has been reported may be present in the area.

LINCOLN TRAIL AREA of central Kentucky: It remains under an advisory. Single-site finds of systemic blue mold were diagnosed several weeks ago in Hardin and Marion counties, but sporulation was not found. The watch exists for Breckinridge County due to the activity in eastern Daviess County. Spores may have moved into the area from the northeast on Monday morning, but unless there was moisture present infections are unlikely.

LOUISVILLE AREA is under a watch, with warnings for Henry, Shelby and Spencer counties. Some strong centers of activity are occurring. Portions of this area have received more timely rains, and are at much greater risk than the dry areas. This blue mold is also a threat to southeastern Indiana and southeastern Ohio.

NORTHERN KENTUCKY AREA is under a Watch with Boone, Kenton and Owen counties now under a warning due to confirmed cases. Lush tobacco in creek or river bottoms are much more likely to have blue mold than ridgeland sites. This blue mold is also a threat to southeastern Indiana and southeastern Ohio.

FORT HARROD AREA of central Kentucky is under a watch with warnings for Franklin, Jessamine, Lincoln, Mercer and Woodford counties where blue mold is active. Strong activity is occurring in some fields, especially with irrigation and morning fog.

BLUEGRASS AREA of central Kentucky is under a watch but counties with confirmed blue mold are under warnings. Active blue mold is being reported from Bourbon, Clark, Estill, Fayette, and Nicholas counties, but low levels of activity are probably present throughout except for the very dry areas. Potential is highly variable in this region, because the rainfall has been highly variable from community to community. Shady bottom land is at the highest risk, especially where it was irrigated during the drier weather. Some agents report very strong hot spots in irrigated river bottoms, especially in rotated or fumigated sites.

LICKING RIVER AREA of north central Kentucky is under a watch because prevailing winds should send spores from the Bluegrass, Quicksand, and Wilderness Trail areas into this region, plus several counties have warnings due to active blue mold. The disease has been confirmed in the following counties: Bath, Mason, Montgomery, and Menifee. Disease potential is highly variable in this area because of drought conditions. This blue mold is

also a threat to southern Ohio and western West Virginia.

NORTHEAST KENTUCKY AREA is under a watch, because prevailing winds will send blue mold spores directly into this area. Drought conditions have greatly limited development, however. Magoffin County is the only county in the area with confirmed blue mold, and that activity was very limited.

QUICKSAND AREA of southeastern Kentucky is under a warning, because it has low levels of disease well established over most of the area. The disease has been confirmed in most counties, including: Breathitt, Lee, Owsley, Perry and Wolfe. Dry conditions and poor plant growth are limiting disease on most farms rather than control programs. Blue mold is well established, but damaging levels are rare. It is well positioned to explode with cool and wet weather. The greatest threat is for this region to generate massive inoculum for other regions.

WILDERNESS TRAIL AREA of southeastern Kentucky is under a blue mold watch with warnings for several counties. The disease has been confirmed in the following counties: Clay and Jackson. Tennessee has confirmed activity nearby in Hawkins County. Blue mold is probably much more widely established than has been reported. Some areas are receiving moisture on Monday, so with the cooler weather, this region could rapidly become a key source of inoculum. Several agents in the area are now reporting that the disease is present in most fields at some level, the strongest activity in the best tobacco. Use of preventive fungicide is very low in this area.

SOUTHERN OHIO: Blue mold watch is issued due to confirmed activity in several northern Kentucky counties (from Boone east to Mason).

SOUTHERN INDIANA: Blue mold watch is issued due to confirmed blue mold near Owensboro, Ky.

SOUTHEASTERN INDIANA: Blue mold watch is issued due to confirmed blue mold activity in several Kentucky counties south of the Ohio River (from Shelbyville northeast to Covington).

WESTERN WEST VIRGINIA: A blue mold advisory is issued due to confirmed blue mold in much of eastern Kentucky. Prevailing winds will send spores into this area.

Foliar fungicide sprays, applied at 5-7 day intervals, are recommended for communities under a watch or warning and all irrigated crops in areas under advisory. Follow label directions as to spray volume, fungicide rate, nozzle arrangements, and days-to-harvest intervals. Acrobat MZ will be the

more effective fungicide. Even in areas under watches or warnings many fields will not warrant sprays, because the tobacco is not growing well enough to economically support the cost of a spray program. Crops with a yield potential under 2500 lbs/A are unlikely to benefit economically from a regular spray program with Acrobat MZ. Exceptions would be crops planted to low plant populations, less than 6000 plants/acre, where very lush growth is present.

We still have float beds with blue mold in them. A major effort should be made to destroy ALL transplants not being specifically maintained (with fungicides) for late plantings, lest they become sites to harbor buildup of blue mold. Such sites are driving disease development in most communities reporting strong disease. Growers still setting tobacco (yes, some are still setting) should suspect that blue mold is active in the transplants, unless they have been under a very aggressive spray program. It is hard to detect blue mold on yellow plants, until after they are set into the field. Recently I stopped at a float bed site with about 30 trays of plants, being held to set a "double-barned" crop. The plants were yellow, being held in a "holding pattern". After examining the plants, I told the grower he had blue mold in nearly every plant. His comment, was: "Son that is not blue mold. They get that way when you pull the fertilizer from them."

CORN

CORN BORERS FLYING

by Ric Bessin

The UK Ag Weather Center model indicates that second generation European corn borer moths are in flight across the state. This computer model developed by Dr. Grayson Brown has provided accurate forecasts of European corn borer activity. This enables corn and pepper producers to be more efficient with monitoring and management activities.

Preventive insecticide applications for second generation European corn borer are NOT RECOMMENDED in Kentucky for several reasons. What is recommended is that fields be scouted for corn borers. If borers exceed the treatment threshold of an average of one egg mass per plant and egg hatch has begun or if 50% of the plants have live larvae feeding on the leaves, tassels,

behind sheaths, or in leaf axils. Timing of insecticide applications is very important for corn borer control. Treatments are ineffective if applied after the larvae have entered the stalk.

In general, insecticidal control of the second generation is more difficult for several reasons. First, because this generation is not as well synchronized egg laying will occur over a much longer period of time and populations may reach threshold two or three times, and the cost of control may exceed the value of the potential losses. Larvae feeding in the leaf axil and are difficult to reach with an insecticide. For these reasons, identification of heavily-infested fields and their early harvest (where possible) may be an effective strategy to reduce losses due to broken or lodged plants and ear drop.

Pepper growers will need to protect their crop from corn borer attack as well. Corn borers bore into pepper fruit just beneath the cap of the pepper. Control needs to be made before the larvae bore into the fruit. Typically 2 or 3 sprays 7 to 10 days apart provide good control of second generation corn borers.

SOYBEANS

JAPANESE BEETLE IN SOYBEAN, AGAIN! by Doug Johnson

Japanese beetles are bringing quite a lot of excitement into some areas of western Kentucky. This has generated several “tales” about their reproduction, spread and life cycle. You may wish to refer to the earlier article (KPN #853 June 28, 1999 found at http://www.uky.edu/Agriculture/kpn/kpn_99/pi990628.htm) for a description of the insect. Also See: IPM-3, KY-ICM manual for Soybean and ENT-13, Insecticide Recommendations for Soybean, and Entfact-409 for more in depth information control recommendations and pictures.

One of the surfacing misconceptions is that Japanese beetle cycles many times during the summer. This is not true. This insect has only one generation each year. The beetles that are out now are all there is going to be this year. That does not mean that some might not move from another location but no more will emerge until next year. The beetles will mate and lay eggs in the soil. These will hatch into white grubs which will remain in the

soil until next summer. They will move deeper or more shallow in the soil as temperatures change. The grub stage is not a factor in field crop production. If on the other hand, you have a very high maintenance situation like a golf green then you will have to take Japanese beetle larvae into account.

Questions have also arisen concerning control of Japanese beetle grub in anticipation of a problem with the adult (beetle) stage next year. This is not an effective method of control. Perhaps if we were worried about grub feeding this would be the case. But so many adults will be produced in the grass covered surrounds that control of the few Japanese beetle that might emerge within a field will make little difference.

Some people are also surprised at having such large populations this year while not realizing the insect was present before. It is not unusual for a migrating pest to have very large populations for the first several years it is in a new area. While the new pest has moved into a new environment, its natural parasites, predators and pathogens have not moved with it in large numbers. It will take some time for these natural controls to catch up with the pest populations. In time they will and the pest populations will drop in size. They probably will not go away but their populations will drop.

VEGETABLES

THE BUGS OF SUMMER by Ric Bessin

Squash bugs are active and symptoms of their damage are beginning to appear. They remove plant sap with their piercing-sucking mouthparts causing the leaves to turn yellow, then brown near the margins and between the veins. Females are now laying eggs, primarily on the undersides in the angle between veins. The bronze football-shaped eggs lie on their sides in groups of 12 or more. These eggs hatch in one to two weeks. Initially, the nymphs are dark red with a light green abdomen and feed together in groups. Squash bugs spend most of their time around the base and stems of the plants and on the undersides of leaves.

Now is the time to monitor for squash bug egg masses. Treat when egg mass numbers exceed an average of one per plant. However, eggs are not controlled by insecticides, so time insecticide

applications to control young nymphs. Small nymphs are much easier to control with insecticides than larger nymphs or adults. Timing is the key to successful squash bug control. Insecticide sprays should target adults and small nymphs early in the season when the plants are small. It is much more difficult to control large numbers of older nymphs and adults later in the season when the plant canopy is dense.

COPING WITH ACCIDENTAL APPLICATIONS

By Lee Townsend

"I finished spraying the shrubs and used the remaining spray in the tank to treat the vegetable garden. Will it be OK to eat the produce"

This scenario is repeated fairly often each summer and the prospect of losing the fresh vegetables obtained from a hard summer of work is not appealing. Sometimes a check of the label shows that the pesticide is in fact labeled for all of the crops involved and the rates are correct. In those cases, the harvest intervals can be followed and the produce can be eaten. This information needs to be accompanied by a reinforcement of the importance of reading and following label directions.

There are times when the product that has been applied is not labeled for some or all of the vegetables or fruits that were treated. This means that there are no residue studies to go by and no harvest intervals to follow to assure that the pesticide residue (if any) is at or below a level that is considered acceptable for each crop. The only advice to give is to destroy the crop and be sure to read the label completely before buying and using pesticides - a harsh but important lesson.

LAWN AND TURF

GRAY LEAF SPOT UPDATE

by Paul Vincelli

Gray leaf spot of perennial ryegrass has emerged during the last few years as a major threat to perennial ryegrass in Kentucky and many states east of the Rocky Mountains. Unfortunately, the only way to reliably grow high-maintenance swards of perennial ryegrass such as golf course fairways in August in Kentucky is to spray fungicides preventively against this disease. Fungicide programs may often be necessary even in lower-

maintenance swards, when disease pressure is high.

I have been keeping a rather aggressive watch for *P. grisea* in perennial rye. As of Saturday, morning, July 10, 1999, I had not detected it in any sample of perennial rye either sent to me or collected by me in the region of Kentucky where perennial rye is grown. This includes golf course sites where the disease has been detected early, before other significant disease activity in the region. I am not surprised by this, since gray leaf spot typically starts its epidemic phase (=logarithmic phase) in Kentucky around August 1 or so in Kentucky. The disease may be poised to begin early infections, but the disease doesn't typically get "cranking" in our region until the first week of August or later.

Superintendents have been understandably fearful of any wilting, leaf-spotting, blighting, or other foliar imperfections that might develop in their rye, especially in the roughs, where gray leaf spot often develops first. As a consequence, many started very aggressive spray programs in June. I appreciate the fear that is behind these spray programs, given what many have gone through in the recent past. Let me suggest that the varied small areas with wilting, leaf-spotting, blighting, or other foliar imperfections probably have occurred in the past without raising much concern, especially if these developed in the rough, where aesthetic standards are not as high as more intensively managed swards. However, given the explosive nature of gray leaf spot, anything that looks out of order, even in the rough, can scare a superintendent into a heavy spray program on fairways.

Based on research available to date, much of which has been conducted here in Kentucky, I recommend beginning a preventive spray program with a "Tier II" product by the third week in July or so. Tier II products are those that perform well under low to moderate pressure, but do not provide complete control under high disease pressure. These include Daconil Ultrex and other well-formulated chlorothalonil products; Banner MAXX; and Sentinel. I recommend switching to a Tier I product under the period when the highest disease pressure is likely in Kentucky, which begins around the first week in August and may continue into early September. Tier I products are Heritage and Cleary's 3336. Then a follow-up spray with a Tier II product for any residual disease activity is recommended, since overuse of Tier I products is bound to lead to fungicide resistance by *Pyricularia*

grisea, a fungus which is very variable genetically and highly adaptable to new control tactics.

SHADE TREES & ORNAMENTALS

A STROBILURIN FUNGICIDE WITH A BROAD LABEL FOR LANDSCAPE PLANTS by John Hartman

Although the strobilurin fungicide Heritage, marketed by the Zeneca Company, has been available for managing turfgrass diseases for a couple of years, this is the first season it has been available to the professional landscape industry for ornamental plants as well. Some County Extension Agents and landscape managers have inquired to learn to which plants and for which diseases this fungicide might be used effectively. Although Heritage may be used in the home landscape by professionals, it does not appear to be packaged for routine homeowner use.

What are strobilurins? Strobilurins are naturally occurring fungicides produced by various species of wood-decaying mushrooms, including *Strobilurus tenacellus* and *Oudemansiella mucida*. These mushrooms produce strobilurins to eliminate other fungi from competing with them for nutrients. One of the strobilurins, azoxystrobin, was selected as the active ingredient for Heritage fungicide. This is the first of what may eventually be several fungicides in this class available for control of landscape plant diseases. All of these natural product-derived fungicides are considered reduced-risk fungicides in that they present little risk to off target species and to the environment.

How does azoxystrobin affect diseases? This fungicide blocks fungal spore germination and infection of the plant. It provides curative activity against certain diseases after infection and it blocks spore production. The fungicide can enter the plant through the foliage or be taken up by the root system. It then moves through foliar tissues and systemically throughout the plant. In some circumstances, the fungicidal effect may last up to 3-4 weeks. Although it does not control all diseases, it does affect a broad spectrum of fungal pathogens.

Selected Plants and diseases for which Heritage is labeled. The following plants and diseases were selected from the recently-issued supplemental label for Heritage:

Roses - black spot, powdery mildew, downy

mildew, rust, and two other leaf spots.

Dogwood - powdery mildew and leaf spots and blights.

Oaks - powdery mildew and leaf spots.

Rhododendrons - powdery mildew, Phytophthora blight, soilborne diseases, anthracnose. Juniper - Phomopsis tip blight and cedar rusts.

Pine - Sirococcus tip blight and rust.

Aster, Hemlock - rust.

Lilac - powdery mildew.

Geranium - rust, gray mold, powdery mildew.

Also fungal diseases of abelia, arbor vitae, artemesia, buddleja, clethra, crapemyrtle, chrysanthemum, English ivy, euonymus, fig, forsythia, foxglove, holly, hosta, Japanese maple, lirioppe, magnolia, nandina, primrose, privet, pothos, ornamental grasses, ornamental pear, river birch, rose-of-sharon, rudbeckia, sedum, viburnum, vinca, wiegela, and many other plants.

Cautionary note. Do not apply Heritage fungicide to certain apple, crabapple, or cherry trees due to possible phytotoxicity. Further, do not use spray equipment that has applied Heritage fungicide for use in these sensitive crops due to possible phytotoxicity from residue remaining in the sprayer. Thus, one of our most disease-prone landscape plants, flowering crabapple, should not be treated with Heritage. This notice is especially important for Kentucky apple growers who might be using the same sprayer for nursery stock. We have also made growers aware that the fungicides Quadris and Abound, two other strobilurins with the same active ingredient, are phytotoxic to many apple varieties. Follow label directions for application and resistance management instructions.

HOUSEHOLD

FOREIGN GRAIN BEETLE ALERT by Mike Potter

"I keep seeing tiny, brown beetles crawling along windows, walls, and floors of my new home. I spray the ones I see, but they keep coming back. What kind of bugs are these and how do I get rid of them?" These are the questions typically asked by clients who have foreign grain beetles, especially when the calls come in late summer (August-September). This year the beetles have begun to appear earlier than normal.

Foreign grain beetles are very small (about 1/16-inch long), brownish, and are often mistaken for flour beetles or other stored product insects. The key characteristic to look for in identifying this beetle is the presence of a slight projection or knob on each front corner of the segment directly behind the head. A microscope or good quality hand lens is necessary to see this character (*See Entfact-610, Foreign Grain Beetle*).

Foreign grain beetles are frequently a problem in new houses (less than 5 years old). These beetles are one of a group of beetles called "fungus beetles" that feed on the molds and fungi that grow on poorly seasoned lumber or wet plaster and wall board. If they are found infesting flour, grain, or other stored products, the products are generally moldy or in poor condition.

When new homes are built, damp wood is often covered with molds or mildew which attracts the beetles. The beetles are also attracted to accumulations of sawdust trapped behind walls during construction. Eggs are laid on this food material and the larvae develop on the surface fungi. The adults usually become a problem in late summer when they move out of wall voids and are attracted to windows and lights. Foreign grain beetles can also be associated with plumbing leaks, condensation problems, or poor ventilation. There is no fast or easy way to get rid of foreign grain beetles. Control is difficult because the breeding source of the beetles is sealed up within the walls. The ultimate solution is time and patience. Most new homes dry out naturally within the first few years, and the fungi and molds disappear along with the beetles. Drying time can be enhanced by increasing ventilation, e.g., by use of fans and air conditioning. A vacuum cleaner can be used to remove beetles emerging from hidden locations. Pest control companies may be able to provide additional relief by locating the infested wall areas or source of dampness (usually next to where the beetles are most abundant), and injecting residual aerosols or dusts into cracks and crevices along baseboards and into the wall voids.

If the homeowner can tolerate the beetles during the period when they are most active (late summer) the problem will usually resolve itself. Some comfort can be taken in the fact that foreign grain beetles are only a nuisance by their presence, i.e., they do not bite or damage wood, fabric, or stored food in sound condition.

DIAGNOSTIC LAB - HIGHLIGHTS

by Julie Beale

We continue to see many disease problems of tobacco, including angular leaf spot, black shank, blue mold, soreshin, Fusarium basal stem rot, Fusarium wilt, several different viruses (TSV, TSWV, TRSV, AMV), and frogeye leaf spot. On soybean we have see a number of cases of Rhizoctonia root and stem rot, as well as nutritional problems.

On fruits we have seen brown rot on peach and plum, more black rot of grape, Sphaerulina leaf spot and red stele on strawberry. On vegetables the diagnoses have included Fusarium root and stem rot on pumpkin; Fusarium root and stem rot on bean; bacterial stalk rot on sweet corn; scab on potato; early blight, southern blight, buckeye rot and bacterial canker on tomato.

On ornamentals we have seen Rhizoctonia root rot on peony; Phytophthora root rot and tip blight (Sphaeropsis) on pine; Pseudonectria canker/dieback on boxwood; frogeye leaf spot on crabapple; and Verticillium wilt on catalpa. Turf diseases have included dollar spot on bentgrass and brown patch and necrotic ringspot on fescue.

INSECT TRAP COUNTS

UKREC, Princeton, KY, July 3-9

European corn borer	2
Corn earworm	6
True armyworm	0
Southwestern corn borer	100
Fall armyworm	3
Black cutworm	2

Lee Townsend, Extension Entomologist

