ANNOUNCEMENTS

NEW MOSQUITO PUBLICATION

A new publication, Mosquitoes: Practical Advice for Homeowners, is now available on the entomology department website. Although there is no simple solution to the challenges posed by mosquitoes, the information should help answer many questions raised by householders. Management considerations beyond the usual “sound-bite” media recommendations are discussed, including some which are a waste of money.

TOBACCO

CURRENT BLUE MOLD STATUS - August 11, 2003 by William Nesmith

General Status: Blue mold activity continues to increase within the state and region’s burley belt, but is now threatening dark tobacco, too. The potential for even greater levels of activity remains throughout much of the Ohio River Valley, unless a major shift to dry weather occurs. Cool nights with fog is the type of weather blue mold prefers, and that is what many areas have been experiencing. With the cooler temperatures and rapid leaf expansion, the blue mold pathogen goes systemic in the veins, resulting in loss of entire leaf panels rather than being limited to spotting of the leaf when the temperatures are higher. Therefore, each infection is capable of causing much more damage than normally experienced.

Activity is widespread, but at highly variable levels within the communities- from very damaging levels in many fields, to hot spot, in fields, to scattered lesions. Economically damaging, first-strike capability still exists, and that threat is increasing, due to the inoculum load building up in Kentucky, especially from growers that are not attempting control efforts and from blue mold building up on sucker regrowth from crops already harvested in the communities. Even areas that do not have blue mold, or strong blue mold activity, need to appreciate that massive inoculum is available for movement from any of the following areas: Lake Cumberland, Wilderness Trail, Bluegrass, Fort Harrod, and Louisville. As wind patterns shift, that inoculum will be available to cause extensive crop damage with the first strike. The only means of preventing losses from such events is to have a blue mold program in place when the spore load (inoculum) arrives.

Controls: The rapidly growing tobacco from layby to topping is at greatest risk, and where infections have already occurred prior to topping expect the development to continue for at least 10 days after topping. Controls should include reducing the plant’s susceptibility to blue mold by using Actigard 50W if the plants are large enough; otherwise, start sprays with Acrobat MZ. In counties under a warning, at least one spray of Acrobat MZ should be made to reduce inoculum even if Actigard will be used. In fields of young tobacco (prior to topping) with active blue mold, use aggressive spray programs with Acrobat MZ to get the disease under control, plus activate the plant’s immune system with Actigard - starting when the plant is 18 inches tall. In fields at the topping stage, Actigard may help improve resistance, too, but topping and including MH-type materials in the sucker control program are even more important, but doing both can be advantages under the current disease pressure.

In a few communities, we have found evidence that metalaxyl-mefenoxam sensitive strains are operating, too,
but in most areas the fungus is highly resistant to the fungicides found in Ridomil Gold and Ultra Flourish. Where sensitive strains are present, that portion of the population can be easily eliminated with applications of these fungicides to the soil.

Foliar fungicide sprays properly made prior to the outbreak or very early on (except where massive inoculum load is present) can greatly reduce the potential damage from blue mold. Use Acrobat MZ at 2.5 lbs /100 gallons of water, adjusting the concentration and volume of fungicide to the stage of growth, according to the label. Repeat the applications at weekly intervals. The systemic aspect of this fungicide makes it especially valuable in blue mold control early in the epidemic, because it greatly reduces systemic infections in the lower stem and midribs. It must be applied well and at close intervals when tobacco is growing rapidly to be effective. Appreciate that in a week’s time, a rapidly growing tobacco plant between layby and topping can increase its growth by 50%, meaning half of the foliage has not received fungicide even when you are spraying on weekly intervals!

I urge the industry to recognize that our studies have repeatedly demonstrated that Actigard provides only about two weeks of control, after which the plant can be seriously damaged by blue mold. Therefore, in younger tobacco, it is important that the second application be made, especially considering the favorable weather and spore load present. We have encountered 20 to 30% loss of leaf in the top portion of the plant from late season blue mold in crops receiving on a single application of Actigard, with this late season activity occurring at about topping time.

To prevent build up in sucker regrowth after harvest, immediately disk deeply to up-root the plant’s root system to aid in more rapid death. Avoid early harvesting of tobacco if blue mold is the disease of concern, as blue mold activity declines rapidly with maturity of the plant. Furthermore, improper housing of blue mold infected crops can result in serious losses from bacterial soft rots moving in as secondary invaders in blue mold lesions. Blue mold infested crops should be wilted well prior to housing and good ventilation should be maintained in the curing systems to minimize loss from the bacterial soft rots already established in the blue mold lesions.

Application guidelines for the fungicides labeled for blue mold control in the field in Kentucky can be found in Kentucky Pest News, issue number 983, April 28, 2003 or at the web address - http://www.uky.edu/Agriculture/kpn/kpn_03/pi030428.htm

Area Status Reports: Below is the status report by area.

Most areas now have many counties under a blue mold warning due to active blue mold in the county. Also, if blue mold is present in a county, it is important that samples be collected for oospore assays in order to receive certification for certain export markets. The marketing rules are written such that if blue mold is present, it is presumed that oospores are present unless samples are collected and examined by a lab certified to make this determination.

PURCHASE of far western Kentucky reported it first case of active blue mold on August 11 from Calloway County in a crop of burley tobacco. Thus, we have elevated this region’s status from an advisory to a watch, with warnings for counties with blue mold. Growers in communities with both dark and burley tobacco need to be especially concerned with blue mold control in burley as the development on burley can provide mass inoculum load to damage the dark, too. Even small lesions on the dark tobacco can be very damaging, as these serve as centers of infections for a number of leaf spot pathogens that can trash the leaf later. Once fields are harvested (burley or dark), be sure to destroy all stubble to prevent sucker regrowth from serving to build a massive load of blue mold in this region.

PENNYRILE of southwestern Kentucky has renewed activity, strong in some fields, with low levels of confirmed blue mold in Christian, Muhlenberg, and Todd counties on burley tobacco. Blue mold is likely to increase rapidly in this region.

GREEN RIVER AREA of northwestern Kentucky: Confirmed only from Daviess, Mclean, and Ohio counties, mainly as scattered lesions to hot spots in fields, but growers from neighboring counties report finding scattered blue mold in fields being topped. Damaging levels have not been reported to us from this area and much of the crop has already been topped. Inoculum load is increasing for this region and the disease could develop rapidly on younger crops without protection.

MAMMOTH CAVE AREA of southwestern/south-central Kentucky has confirmed activity in Allen, Barren, Hart, Logan, and Simpson counties as scattered lesions to hot spots in fields. However, the level of activity is increasing fast in some sites, but most crops have escaped blue mold so far, and much of the crop has already been topped.

LINCOLN TRAIL AREA of central and west-central Kentucky: Confirmed in Breckinridge, LaRue, Meade, Hardin, and Washington counties, with the activity being highly variable from none to very strong in sites. There are moderate to strong centers of activity present in lush growing tobacco, especially where ground suckers are strong. Some agents report that bleach is the most widely used treatment being applied, but some are using...
Actigard.

**LAKE CUMBERLAND AREA** of southern Kentucky: Confirmed activity in Adair, Casey, Cumberland, Pulaski, Taylor and Wayne counties but is probably present in all. Agents report that the level of activity is highly variable from farm to farm, from the disease under control where timely Actigard applications were made, to damaging activity present on the foliage from the ground to the top of the plant in many fields, especially in lush tobacco without controls in place. Keenan Turner of the UK Pulaski County Extension Office reported that full time tobacco growers were doing a good job of controlling the disease, for the most part, while the part-time farmers have given up on control efforts. Raymond Thompson of the UK Russell County Extension Office reported finding fields with very damaging activity from the first strike of blue mold, especially in tobacco that had recently closed canopy in the row and approaching the topping stage. Some communities observed a major increase in activity during the past week while others did not experience the moisture needed to drive a continued epidemic. Preventive and rescue activities are not widespread. Several agents reported that the many of their growers are just going to ride it out, so that inoculum will be targeting those wanting to control the disease.

**LOUISVILLE AREA:** Blue mold is becoming widespread at low levels but some fields have moderate to strong activity present. Henry, Oldham, Shelby, Spencer, and Trimble counties have confirmed blue mold. Strongest activity is being found in crops that have just closed the canopy, but it is continuing to develop after topping for at least 10 days. The disease has gone systemic in midribs and veins and is causing considerable damage on some farms. Agents report good use of Actigard, with success, in the area but very little use of foliar-type fungicides. The amount of preventive use of Actigard is highly variable from county to county in this region.

**NORTHERN KENTUCKY AREA:** Confirmed in Campbell, Carroll, Grant and Owen counties, but growers are reporting the disease from other counties. Frogeye leaf spot is common, too.

**FORT HARROD AREA** of central Kentucky: Disease has been confirmed from all counties. Active in Anderson, Boyle, Franklin, Garrard, Jessamine, Lincoln, Mercer, and Woodford counties, ranging from scattered lesions to covered from the bottom foliage through the top of plant in some fields with closed canopy. Use of control programs has been low compared to the threat but increased significantly in the past week.

**BLUEGRASS AREA** of central Kentucky: Confirmed in Bourbon, Clark, Estill, Fayette, Harrison, Madison, Nicholas and Scott counties. Gary Carter with the UK Harrison County Extension Office reported that nearly every field had some activity but most fields have escaped widespread levels of damaging activity to this point, but hot spots of damaging activity are present on many farms.

Nick Carter with the Fayette County Extension Office reported the disease was widespread and ranged from scattered lesions to major damage in fields. He indicated that growers that have used Actigard preventively have had very little damage, but too many waited too late to respond to our advice. In general, agents report increasing use of Actigard around the region, with good success in most cases, but raise concern that few are willing to make the second application even on the smaller tobacco.

**LICKING RIVER AREA** of north-central Kentucky has experienced a sharp increase in activity during the past week. It has been confirmed in Bath, Bracken, Fleming, Mason, Menifee, Montgomery, and Rowan counties, but is probably active in all. The current level of activity is highly variable and mainly present as scattered lesions, with some hot spots in the field. The area needs to appreciate that massive inoculum is available nearby to cause great damage on a first strike should winds shift to the south or southwest, so protect younger crops. Some fields have epidemic levels of target spot, which is being confused with blue mold.

**NORTHEAST KENTUCKY AREA:** Has been confirmed only in Elliott, Greenup, Johnson and counties, but is probably active throughout this region as scattered lesions. Some fields have strong target spot and frogeye leaf spot activity, too.

**QUICKSAND AREA** of southeastern Kentucky: Most counties report very strong and damaging levels of blue mold. Systemic activity is occurring in the main stem as well as the midrib and veins. This area is also experiencing strong activity from target spot, frogeye, and ragged leaf spot. The disease has been confirmed in Breathitt, Lee, Owlsley, Perry, and Wolfe counties and is probably developed widely in this region. Much of the crop is now closing canopy, so expect even stronger activity in the next week. The other leaf spots will likely continue to develop even if the weather becomes unfavorable for blue mold in this area as much of the crop has a poor root system and such crops are more prone to aggressive action by frogeye and ragged leaf spot.

**WILDERNESS TRAIL AREA** of southeastern Kentucky: This area also has some counties with very strong activity, with confirmed cases from Knox, Jackson, and Rockcastle. We do not understand why there is not activity in Clay, Laurel, and Whitley counties considering the weather events of the past month. The other leaf spot diseases are also active, and increasing fast in some counties.

**WESTERN WEST VIRGINIA:** Blue mold has not been confirmed to our knowledge, but our sources indicate that transplants from east Tennessee ended up in the region. Thus, we have placed your region under an advisory and upgraded it today to a watch. Moreover, Kentucky has been sending a mass of spores your way in the past several days. We hope you are prepared.
SOUTHERN OHIO: Blue mold has been confirmed in Adams, Brown, Highland, and Scioto counties with the level of activity being highly variable, but some strong activity is present. Agents report increased use of fungicides, but indicate the response is slow compared to the threat.

SOUTHEASTERN INDIANA: Blue mold has been confirmed in Franklin, Jefferson, Switzerland, Ripley, and Ohio counties of southeastern Indiana, but no reports so far from southern counties. The level of activity is highly variable but serious crop damage is occurring in some fields or large portions of the field. We expect the activity in the Lincoln Trail Area of Kentucky has extended through to southern Indiana, too.

Eastern Tennessee, western North Carolina, and western Virginia also have active blue mold in burley tobacco that are impacting our region with spores. Also, there is renewed activity in middle Tennessee.

CORN

AFLATOXIN AND OTHER MYCOTOXINS ARE A RISK IN STORED CORN
by Paul Vincelli

I received a call last week from an agent in the Purchase area telling of a producer who was forced to dispose of thousands of gallons of milk contaminated with aflatoxins. Although tests are still pending, the stored corn used in the feed is a likely source of these toxins.

Aflatoxins are natural toxins produced in corn, peanuts, and cottonseed by the fungus *Aspergillus flavus*. The permissible amounts of aflatoxins in corn are regulated, because of their potent toxicity and apparent carcinogenicity.

Aflatoxin contamination of corn can occur in the field, although this is uncommon in Kentucky. When it occurs, it is associated with hot, dry weather conditions during grain fill and often injury to the kernels from insects and/or birds. Contamination can also develop in storage. The fungus can grow and produce aflatoxins in corn as low as 17-18% moisture content (MC). Thus, harvest at 22-25% MC and prompt drying to 15.5% MC is an important control measure for aflatoxins. Moist corn should be dried within 24 hours of harvest. Corn that is to be stored through the summer should be dried to 13% MC.

Details on how aflatoxin contamination develops, what to do with contaminated corn, and ways to reduce risk are described in the UK Extension publication “Aflatoxins in Corn, ID-59”, available in county Extension offices or on the web at [http://www.ca.uky.edu/agc/pubs/id/id59/id59.pdf](http://www.ca.uky.edu/agc/pubs/id/id59/id59.pdf).

Your Extension agent can also provide information on testing corn for aflatoxins and other mycotoxins.

FRUIT CROPS

APPLE POWDERY MILDEW HAS BEEN ACTIVE THIS YEAR
by John Hartman

Powdery mildew, caused by the fungus *Podosphaera leucotricha*, has been observed frequently in apples this season. This disease can seriously reduce the vigor and productivity of apple trees. The mildew fungus may deform, stunt, or kill twigs, leaves, blossoms and fruit. Infected fruits may become severely russeted. Gray to white felt-like patches occur on the leaves and on new twigs. Leaves are narrow, crinkled, and folded lengthwise, and they become thickened. Disease pressure from powdery mildew is usually greater in growing seasons following relatively mild winters which we have been experiencing for the past several years.

Powdery mildew can be managed with well-timed fungicide applications in spring beginning before bloom and continuing for several weeks after bloom. Fungicides such as Bayleton, Nova, Procure, Rubigan, and Topsin-M, are excellent for management of powdery mildew and most of these will also control apple scab. Unlike apple scab, powdery mildew infections do not require leaf wetness, so reduced apple scab spray programs during dry spring weather may miss powdery mildew. Thorough spray coverage, including the tops of trees is essential for control of powdery mildew with fungicides.

Apple cultivars vary in their reaction to powdery mildew. The following list indicates susceptibility of apple cultivars to powdery mildew:

**Resistant.** This means that control is not needed or only needed under high disease pressure. Arkansas Black, Braeburn, Dayton, Delicious, Enterprise, Fuji, Gala, Grimes Golden, Jonafree, Lodi, Lord Lambourne, Niagara, Nittany, Prima, Priscilla, Sir Prize, Spartan, Tydeman’s Red, Williams Pride, Winesap, Yellow Transparent.

**Susceptible.** Control is usually needed where disease is prevalent. Ben Davis, Cox’s Orange Pippin, Empire, Golden Delicious, Gold Rush, Jerseymac, Jonagold, Jonamac, Liberty, Macoun, McIntosh, Milton, Mutsu (Crispin), Northern Spy, Pristine, Puritan, Quinte, Redfree, Rhode Island Greening, Spigold, Spijon, Summerred, Twenty Ounce, Wayne, Wealthy, Wellington, York Imperial.
Highly susceptible. Control is always needed where the disease is prevalent. These cultivars should receive first priority for fungicide application when control is called for. Baldwin, Britemac, Cortland, Ginger Gold, Granny Smith, Gravenstein Holly, Idared, Jonathan, Julyred, Monroe, Paulared, Prime Gold, Rome Beauty, Stayman.


**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).

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 shield-like segment directly behind the head. A microscope or good quality hand lens is necessary to see this character (See Entomology Entfact-610, Foreign Grain Beetle).

Foreign grain beetles are frequently a problem in new construction (less than 5 years old). They are one of a group of beetles called “fungus beetles” that feed on molds and fungi growing 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. In older homes, 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 concealed 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 limited relief by locating the infested wall areas or source of dampness (usually in the rooms where the beetles are most abundant), and injecting residual aerosols or dusts into cracks and crevices beneath baseboards and into the wall voids.

If the homeowner can tolerate the emergence of the adult beetles during August-September, the problem will usually resolve itself. Most newly-built houses cease to have problems after a few summers, and the beetles usually will not be evident during the rest of the year. Some comfort can be taken in the fact that foreign grain beetles are only a nuisance by their presence. They do not bite or damage wood, fabric or stored foods in a sound condition.

**INSECT TRAP COUNTS**

UKREC, Princeton KY

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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.