



KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • AGRONOMY

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CORN

EUROPEAN CORN BORERS ACTIVE By Ric Bessin

Corn producers in the western and southern portions of the state should begin scouting for European corn borer larvae. Because of the warm spring we have experienced, corn borer activity is early this year. However, many areas have experienced severe weather during moth emergence, mating and egg-laying, this may reduce levels of first generation larvae in some fields.

In particular, producers should pay close attention to early planted fields that are ahead of other fields in the area. These fields typically attract more intense egg laying. Most corn hybrids grown today resist European corn borer when they are less than 18 inches tall. However, as they continue to grow, their resistance diminishes.

Producers using Bt-corn hybrids should not have any problems with the first generation of this insect. However, some Bt-corn technologies do not have full season control and may allow for some damage by the second generation. Keep in mind

that some European corn borer damage may still occur even in fields planted with Bt-corn seed, but the damage should be rare. Approximately 2 to 5 percent of the seed may produce plants that do not express Bt. In addition, plants producing Bt may have a small number of very small pin holes in the leaves, as the larvae must ingest a small amount of leaf material to be controlled.

TOBACCO

EARLY INSECT PROBLEMS by Lee Townsend

Plants may wilt for a variety of reasons soon after they are set in the field. Check them for signs of leaf-feeding and carefully scoop soil from around the base of the plant to expose the below-ground portion of the stem and root system. Insect damage is typically seen as gouges or tunnels in healthy, white tissue. Cutworms are most frequently the source of insect injury but occasionally wireworms are found.

With the relatively moist soil conditions in many areas, cutworms will do a significant amount of leaf feeding— chewing large, irregular holes, especially in leaves lying on the soil surface. If the bud is not

damaged and the stem is not cut, the plant can recover. Hot sun and dry soil forces the cutworms to feed below ground where they sever the stem, killing the plant.

Rescue treatments for cutworms, which include Orthene and Proxol as foliar sprays, are most effective as stomach poisons. Prospects for control are best when cutworms are feeding aboveground on the leaves and are poorest when feeding is below the soil surface.

Wireworms tunnel into stems, entering the plant below the soil surface. These dark brown, hard-bodied beetle larvae usually can be found by splitting the stalk lengthwise. There are no effective rescue treatments for this pest. However, if the plant is not girdled by the attack, it will probably survive but remain noticeably stunted during the remainder of the season. Usually neighboring plants will be larger because of reduced competition and there will be no appreciable yield loss. The wireworm is usually removed when a damaged plant is pulled and replaced.

Several insects can attack tobacco transplants soon after they are set in the field. Small (1/16" diameter), round holes are chewed by tobacco flea beetles. Usually there are several holes on each leaf and the small beetles can be seen on the foliage. Expect moderate to heavy feeding injury from these small insects over the next 3 to 4 weeks. These beetles will lay their eggs at the base of tobacco plants and eventually die. A new group of adults will emerge from the soil in about 30 days. The larval stage of tobacco flea beetles feeds on the roots of the plant and probably causes little injury to the plant.

Palestriped flea beetles have been a serious problem in years following mild winters. They are larger than the tobacco flea beetle and have a distinct pale stripe on each wing cover. Damage by this insect can be much more severe than the tobacco flea beetle but Orthene or Admire transplant water applications should provide good control. A foliar spray can be applied if not transplant water insecticide was used.

Spotted cucumber beetles (southern corn rootworms) will feed some on tobacco but do not occur in large numbers. Their round feeding holes

are larger (1/4") than the flea beetle but occur only on scattered plants. These insects feed on a wide variety of crops and weeds so their effect usually is not focused on a particular species. They rarely cause enough damage to be of concern.

CURRENT BLUE MOLD STATUS

By William Nesmith

WESTERN KENTUCKY: BLUE MOLD WARNING! Blue mold activity is increasing in western Kentucky and could develop rapidly following the blue mold-favorable weather events of the past week. Control programs should be in place and maintained for transplant and field production in this region.

Blue mold has been confirmed in burley and dark tobacco transplant production systems in the following western Kentucky counties: Caldwell, Calloway, Christian, Daviess, Hancock, Logan, Todd, Simpson, Warren and Webster. An additional threat to this region of Kentucky is the activity in western and middle Tennessee, as far east as Macon Co. It is also active north of the Ohio River in Spencer County, Indiana. Even though Florida plants apparently served as the source of initial inoculum for this region, the outbreak is no longer confined to Florida sources. Secondary spread has occurred. Evidence suggests a significant spore shower probably occurred within the past 10 days. I suspect blue mold is much more widespread in the region than has been reported to us.

CENTRAL KENTUCKY: BLUE MOLD WATCH! (WARNING FOR WASHINGTON COUNTY). Blue mold has been confirmed in a direct-seeded greenhouse in Washington Co. The source of spores is not known, but probably airborne within the past two weeks from southwest (Kentucky or Tennessee). The fungicide program was weak and moisture control was a problem. Recall that a low-level risk of airborne movement of blue mold from western sources to central Kentucky has developed several times during the past two weeks. Blue mold can develop rapidly in transplant production systems from a single point-source of inoculation. Understand that we cannot control the current strains of blue mold in transplant operations by waiting until the disease appears to start sprays! Timing (preventive) and coverage (complete surfaces) are critical to control. In addition to regular fungicide sprays for transplant operations,

spray programs for field plantings should also be underway in counties under a warning. Considering the instability of the situation, growers may want to spray fields now throughout this region, especially those with poor spray equipment. Also, be aware that the watch in this region is likely to become upgraded to a warning prior to the next issue of Kentucky Pest News.

SOUTHEASTERN, EASTERN AND NORTHERN KY: BLUE MOLD WATCH! Blue mold has not been confirmed in this region, but it may be active at low levels. Growers in these regions are urged to keep fungicide sprays in place in all transplant systems. Also, remain alert to all sources of active blue mold. In addition to the above activity, blue mold is active in eastern Tennessee - as far north as Hancock County.

WEATHER EVENTS: Kentucky's weather has been highly variable during the past 10 days, from ideal for spread and development to unfavorable for the disease. The Memorial Day weekend period was especially conducive for blue mold development and spread. I suspect considerable spread and development occurred during this period. The forecast suggests we will experience both highly favorable and unfavorable events over the next week. Night conditions should remain favorable in transplant operations, regardless of the daytime conditions, so spread within these systems could be explosive where infection centers have established. The cloudy days will keep plants in a state of high susceptibility. Once we have a better assessment of the amount of blue mold active in Kentucky warnings could be posted statewide any time for field plantings.

TRANSPLANT ADVISORY: Growers should assumed that transplants moving from the following areas may have been exposed to or infected with blue mold: western Kentucky, western Tennessee, central Kentucky, east Tennessee, Florida and Georgia. Kentucky's tobacco industry should remain very alert to the movement of blue mold on transplants, both from in-state and out-of-state sources. It is recommended that growers obtaining transplants from off their farm, use locally produced transplants in order to reduce spread of blue mold from region to region. Also, remain alert to the changing blue mold situation, because a source of transplants that was blue mold-free previously could have become contaminated in the last few days.

WEB-SITE: Our Blue Mold website is a good place to keep up with blue mold happenings impacting Kentucky. Especially important is the link to the North American Blue Mold Forecast System at North Carolina State University, which gives a future look at where blue mold is forecast to move via airborne routes.

The URL address is:
<http://www.uky.edu/Agriculture/kpn/kyblue/kyblue.htm>

LIVESTOCK

FOOD QUALITY PROTECTION ACT AND LIVESTOCK INSECTICIDES

The Food Quality Protection Act requires that the EPA assess the risks from all uses of pesticides. Among those in Group One are organophosphate, carbamate, and B1 and B2 carcinogenic pesticides. The following active ingredients (brand names) are livestock insecticides recommended primarily for grub and lice control: coumaphos (Co-Ral), famphur (Warbex), fenthion (Tiguvon), phosmet (Prolex), trichlorfon (Neguvon), methoxychlor, permethrin (Atroban, Ectiban, De-Lice) and amitraz (Taktic). Group One products are subject to tolerance reassessment within the next two years. Replacement products (non-FQPA pesticides) include doramectin (Dectomex), eprinomectin (Eprinex), ivermectin (Ivomec), cyfluthrin (Cylence), and lambda-cyhalothrin (Sabre). (Agrichemical Insider)

FRUIT CROPS

FROGEYE LEAF SPOT IS APPEARING ON APPLE

By John Hartman

Symptoms of frogeye leaf spot are plainly evident on leaves of apple and crabapple throughout Kentucky this week. In many plantings in eastern Kentucky, frogeye leaf spot will be more prevalent than other diseases such as scab or rust which are also visible now.

The symptoms appearing now on leaves are small (1/8 - 1/4 inch) distinct circular, brown spots. The center portion of the spot may become tan colored, while the outer edge remains dark brown, giving it a frogeye appearance. By contrast, apple scab

develops as dark brown to black diffuse spots without sharp margins, and rust spots will have a distinct yellow-orange color. Signs of disease in the form of tiny black pycnidia (fungal fruiting bodies) of the causal fungus may develop in the center of the spot. Pycnidia can be examined with the aid of a hand lens and will appear as tiny black "pimples" when viewed through the magnifier. These pycnidia contain thousands of spores that are the source of continued infections. As leaf spots become more numerous and coalesce, leaves yellow and fall.

The cause of frog-eye leaf spot and also black rot of the fruit and a canker disease of apple twigs and branches is a fungus called *Botryosphaeria obtusa*. This fungus is capable of attacking over 100 different kinds of trees and shrubs in Kentucky, so inoculum is quite widespread. The infections now being seen on the leaves most likely originated from cankers on dead twigs and branches in the tree. The black rot fungus frequently invades last year's infections of fire blight, still another disease, causing a canker of the branch or twig. Such cankers may weaken the limb to the extent that the branch breaks under a heavy fruit load, or is killed outright. Often a cone-shaped area of affected leaves will appear just beneath such a canker.

In trees with many cankers and spotted leaves, fruit infections have probably already occurred, but fruit decay will not appear until fruits mature. Infections usually begin in the blossom end of the developing fruit. As the fruits enlarge, a brown decayed area appears. The decay is often characterized by a series of concentric rings alternating from black to brown on the fruit surface. Pycnidia are scattered over the surface of the decayed fruit. Eventually, the rotted fruits dry out and mummify, sometimes hanging on the tree until the next season.

Control suggestions include:

- * Prune out and destroy all dead twigs and branches. When pruning, promote rapid wound closing by not leaving stubs or making flush cuts.
- * Thin out branches to promote good air movement.
- * Remove mummified fruit (infected the previous year).
- * Protect the fruits from injury caused by insects or harsh spray materials.
- * Promote optimum robust growth.
- * Protectant fungicides used to control scab are

generally effective against frog-eye leaf spot.

SHADE TREES & ORNAMENTALS

BORERS ARE FLYING

By Mike Potter

Four serious pests of landscape trees — dogwood borer, bronze birch borer, flatheaded apple tree borer, and honey locust borer — have emerged. 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 white or paper birch, especially cultivated trees under stress. Flatheaded apple tree borers are major pests of red maples, hawthorns, flowering crabapple, and several other hardwoods, especially those which are newly transplanted or under stress. Honey locust 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, soil compaction, lawn mower/weed trimmer injuries, etc. Because newly planted are under considerable stress, preventive sprays are advisable during the first couple of growing seasons after planting. Timing is crucial in order to have a lethal residue of insecticide on the bark to intercept newly-hatched larvae before they burrow into the tree. *Now is the appropriate time to apply protectant sprays for all four species.* Lindane or Dursban are effective, and should be sprayed to runoff on the trunk and main scaffold limbs. A second application, three weeks after the first one, provides extended protection.

BAGWORMS ARE HATCHING

By Mike Potter

Bagworm eggs have now hatched and the young larvae are at their most vulnerable stage for treatment. This caterpillar is a serious defoliator of many different kinds of landscape and nursery plants. They are especially damaging to evergreens such as juniper, arborvitae, spruce, pine and cedar.

Bagworms overwinter as eggs within spindle-shaped bags made of silk and bits of plant material.

Young larvae emerge and immediately begin feeding on the upper side of leaves, camouflaged within a tiny bag pointed upward. The bag is gradually enlarged as the larva grows. Older larvae strip evergreens of their needles and consume whole leaves of susceptible hardwood species, leaving only the larger veins.

Control- The best time to control bagworms is during the next few weeks, while the larvae are small. Carefully inspect susceptible landscape plants, especially evergreens, for last year's bags. Preventive treatment is often justified on plants that were heavily infested with bagworms the previous year. Small bagworms may also disperse to previously uninfested plant material after becoming wind-borne on silken strands.

Overwintering eggs can be destroyed by hand-picking old bags during the winter or early spring. However, this window of opportunity has passed, and insecticides are now the only effective means of control. For homeowners, Sevin, Dursban, Malathion, or the microbial insecticide *Bacillus thuringiensis* (BT) work well. For nursery and landscape professionals, other effective products include Astro, Decathlon, Mavrik, Orthene, Pounce, Scimitar, Talstar and Tempo.

(For more on this pest, see the new Entfact-440, *Bagworms on Landscape Plants*.)

FUNGUS KILLED FLIES PLASTERED TO LEAVES

By Lee Townsend

Small, dark flies (about 1/3 the size of a house fly) have begun to show up in large numbers in some areas and can be seen resting on just about any surface from plants to vehicles. These are probably adults of seed maggot and root maggot flies that have just completed a generation. The larval or maggot stages occur in soils with high organic matter and do well in cool, wet soils. The adults are harmless. These flies are often killed by a fungus disease and are seen stuck to plant foliage. Often whitish fungal structures can be seen growing out of the dead flies. You may get some questions about these insects.

MANY MAPLE GALL MITES

By Lee Townsend

Several species of gall mites produce striking symptoms on maples but they rarely affect tree health. Maple bladder galls are green or red "warts" that can be found on the upper surface of red or silver maple leaves. Long, thin maple spindle galls arise from sugar maple leaves. Green or red felt-like patches on the underside of silver and red maples are erineum galls.

These galls are produced by tiny mites that feed on the new leaf growth in the spring. Galls, produced by leaf tissue, develop around the mites providing food and shelter. Colonies containing hundreds of mites can flourish in the gall. Adults will disperse from the gall and move to newly developing leaves. Gall production slows and stalls as new leaf growth ceases in late spring. Leaves produced during late spring and summer usually do not have galls. See Entfact 404 for more information on maple galls.

HOUSEHOLD

MANAGING CARPENTER BEES

By Mike Potter

If you haven't been receiving calls about large, black bees hovering around the eaves, decks, and wood siding of your clients' homes, you will shortly. These are probably carpenter bees searching for mates and nesting sites. Carpenter bees cause - cosmetic and structural damage to wood. They can be quite intimidating to homeowners and have the potential to inflict painful stings.

The Problem- Carpenter bees are similar in appearance to bumble bees, but have nesting habits which are different. Bumblebees nest in the ground, whereas carpenter bees tunnel into wood to lay their eggs. Bare, unpainted, or weathered softwoods are preferred, especially redwood, cedar, cypress and pine. Painted or pressure-treated wood is much less susceptible to attack. Common nesting sites include eaves, fascia boards, siding, wooden shake roofs, decks and outdoor furniture.

Carpenter bees overwinter as adults in old nest tunnels. After mating, the fertilized females excavate tunnels in wood, laying their eggs within a series of small cells. The cells are provisioned with a ball of pollen on which the larvae feed, emerging

as adults in late summer. The entrance hole and tunnels are perfectly round and about the diameter of your finger. Coarse sawdust, the color of fresh cut wood, is often seen beneath the entry hole, and burrowing sounds may be heard within the wood. Female carpenter bees may excavate new tunnels or enlarge and reuse old ones. Serious damage can result when the same piece of wood is utilized for nesting year after year.

Males are often aggressive, hovering in front of people who are around the nests. The males are harmless, however, since they lack stingers. Female carpenter bees can inflict a painful sting, but seldom will unless handled or molested.

The Solution- The best time to control carpenter bees is before the tunnels are fully constructed. Liquid sprays of Sevin, Dursban, Ficam, or a synthetic pyrethroid (permethrin, cypermethrin, cyfluthrin, etc.) can be applied to wood surfaces attracting large numbers of bees. Wettable powder, flowable and microencapsulated formulations perform better than emulsifiable concentrates since treated surfaces tend to be porous. Residual effectiveness of most spray formulations sold to homeowners is only about 7-10 days, so the treatment may need to be repeated. Carpenter bee tunnels that already have been excavated are best treated by puffing an insecticide dust (e.g., Sevin, Ficam, Drione) into the nest opening. Aerosol sprays sold for wasp or bee control also are effective and often more convenient than dusts for the homeowner. Although carpenter bees are less aggressive than wasps, female bees provisioning their nests will sting. Treatment is best performed at night or while wearing protective clothing.

Leave the hole open for a few days after treatment to allow the bees to contact and distribute the insecticide throughout the nest galleries. Then plug the entrance hole with a piece of wooden dowel coated with carpenter's glue, wood putty, or other suitable sealant. This will protect against future use of the old nesting tunnels, as well as moisture intrusion and wood decay.

Carpenter bees normally will not tunnel into painted wood. Therefore, a more permanent solution is to paint unfinished wood surfaces, especially those with a history of being attacked. Wood stains and preservatives are less reliable than painting, but will provide some degree of repellency versus bare wood. To further discourage nesting, garages and outbuildings

should be kept closed when carpenter bees are actively searching for nesting sites.

DIAGNOSTIC LAB-HIGHLIGHTS

By Julie Beale and Paul Bachi

We are continuing to see many tobacco diseases--Pythium root rot, Rhizoctonia diseases, blackleg, blue mold. Pythium has been especially prevalent in the last week, with root infectious and blackening and constriction of stems from Pythium stem infections. Heat injury and fertility problems (both low and high) are also common. Head scab of wheat was seen last week in Western KY.

In the landscape, we are seeing a variety of infectious problems, including: Phomopsis twig blight on juniper and false cypress, Discula anthracnose and spot anthracnose on dogwood, as well as anthracnose on maples, Cladosporium leaf spot on peony, bacterial spot on English ivy, powdery mildew on euonymus and ageratum, and rose rosette virus on rose.

Fruit and vegetable diseases include peach leaf curl (still prevalent) on peach and nectarine, and the similar disease of plum, plum pockets; orange rust on blackberry; apple scab; and bacterial speck and Sclerotinia collar rot on tomato.

INSECT TRAP COUNTS

May 15 - 22

Princeton

Black Cutworm	8
True Armyworm	48
European Corn Borer	12

Lee Townsend