

KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE

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PARASITIZED HORNWORMS on tobacco and tomatoes, they will not cause any more damage; time for pre-harvest **GRAIN BIN SANITATION**; **FRUIT FLIES** infesting over-ripe fruit and vegetables; bites from **LONE STAR TICKS**, especially larval “seed ticks”; aggregations of **BLISTER BEETLES** on tomatoes and potatoes.

ANNOUNCEMENTS

PLANT MANAGEMENT NETWORK UPDATE

by **Kenny Seebold**

Phil Bogdan, communications manager for the Plant Management Network (PMN), sent me the following news release regarding the latest edition of Plant Disease Management Reports. As a partner of the Plant Management Network, all faculty, **students**, and staff (including county extension agents) are entitled to free access to resources offered by the PMN. Please take a moment to visit the PMN site and take advantage of your free membership!

Latest volume of crop disease management reports published by the plant management network

The 2008 volume of Plant Disease Management Reports (PDMR), an online resource developed to give growers, consultants, pesticide applicators, and extension specialists the latest in disease management information, is now published.

This latest volume contains more than 560 searchable reports on the effectiveness of fungicides/nematicides, resistant varieties, and other biological controls that defend against diseases of agricultural and horticultural crops.

All volumes of PDMR and its preceding publications, F&N Tests and B&C Tests, contain 5,000-plus reports, covering more than 1,500 chemical and biological controls.

“Many professionals in agriculture and horticulture depend on PDMR to develop disease management recommendations or make better pest management decisions,” said Dan Egel, Ph.D., Extension Plant Pathologist at Purdue University and Editor-in-Chief of Plant Disease Management Reports.

Each one- to two-page report consists of a summary outlining trial conditions and results. Test plot trial data, also in the report, includes treatment rates, application timings, and pertinent efficacy data for each product tested.

Users can search the reports by keyword or section. Keyword searches can include product names, active ingredients, host crops, and authors. Sections include cereals and forage crops; citrus, tropical, and vegetable crops; field crops; ornamentals and trees; pome fruits; seed treatments (for all crops); small fruits; stone fruits and nuts; and turfgrass.

PDMR’s efficacy reports were first published in 1946 as a section in the USDA publication, *Plant Disease Reporter*. In 1960, the American Phytopathological Society (APS) published these reports independently under the title

Fungicide and Nematicide (F&N) Tests. In 1986, APS developed a new publication, Biological and Cultural Tests for the Control of Plant Disease, or B&C Tests. By 2001, both resources became electronically accessible. In 2007, they were merged into Plant Disease Management Reports. A full history is discussed in this volume of PDMR.

Users can have continuous access to all volumes of Plant Disease Management Reports, F&N Tests, and B&C Tests online for \$45 yearly. This subscription also includes access to other Plant Management Network resources, which include Arthropod Management Tests, a similar publication covering the effectiveness of insecticides; applied crop science journals, webcasts, targeted extension searches, image collections, proceedings, and more. To subscribe or learn more, visit www.plantmanagementnetwork.org/pdmr.

PDMR is distributed online through the Plant Management Network (www.plantmanagementnetwork.org), a nonprofit publisher of applied plant science resources. The Plant Management Network is jointly managed by the American Phytopathological Society, the Crop Science Society of America, and the American Society of Agronomy. The Plant Management Network's nonprofit publishing mission is to enhance the health, management, and production of agricultural and horticultural crops.

TOBACCO

BLUE MOLD ARRIVES IN KENTUCKY by Kenny Seebold

We almost made to the finish line, so to speak, without seeing our old nemesis, blue mold. Almost. On August 13, we confirmed blue mold in Shelby County and another case in Henry County on August 14. In both situations, the disease appeared to have first started 7-10 days earlier, as no active sporulation was observed on lesions, and the lesions themselves appeared to be relatively old. I made a visit to a few fields in Shelby County on August 15, and found plenty of new lesions and abundant sporulation on late-set tobacco, and on ground suckers on a crop that had been topped about two weeks. We also confirmed an additional case of blue mold from Oldham County on August 16, so it appears that a small "hot-spot" of disease is active in the Oldham-Henry-Shelby County area. The North American Plant Disease Forecast Center projected movement of inoculum from the Shelby County source into areas toward the southeast, roughly on a line that would have impacted Franklin, Woodford, Jessamine, Fayette, Madison, and Jackson Counties. Scattered showers and cool night temperatures occurred during the transport period, August 14-15, meaning that susceptible

crops in these areas (and perhaps other counties along this line) faced a moderate risk infection by the blue mold pathogen.

The most important question is how to proceed from here through the end of the season. On the positive side, a lot of tobacco has been topped (and a good bit has been cut) and treated for suckers, and more is being topped with each passing day. This more-or-less removes these crops from the susceptible list. Exceptions would be fields where sucker control is poor, since blue mold seems to love ground suckers. The risk at the moment to crops waiting to be topped appears to be low-to-moderate. Our weather will warm substantially during the week of August 18, and rain chances are fairly low heading through the beginning of the following week; this should curb the threat to susceptible tobacco quite a bit in the coming days. Still, there will be a small number of producers who may be in a situation that requires the application of fungicides.

The decision to apply fungicides should be based on location of a particular field and age of the crop. Tobacco located near existing sources or in blue-mold-favorable environments along the line of projected spore movement would be the likeliest of candidates, particularly if the crop is more than 10 days away from topping. If a fungicide is to be applied, I'd recommend Quadris at this stage of the game, and would go with 8 or more ounces per acre. With good coverage (very critical – drop nozzles are recommended) and adequate spray volume (50+ gal/A), we can expect a couple of week's protection against blue mold along with suppression of target spot. Over the past week or so, the incidence and severity of target spot has spiked, and it appears to be worse in places where the environment favors this disease or where target spot has been problematic in the past. Given that target spot and other opportunistic diseases can move into leaves that are damaged by blue mold, the Quadris option might make sense for those in the path of the disease or those that are beginning to see significant damage from target spot in the lower leaf positions.

I don't think we are in a crisis situation by a long shot, but I do know that blue mold has a way of biting us if we are not prepared. Please contact me at kwseebold@uky.edu if you find or suspect blue mold in your area I will keep a close eye on things in the coming days, and will provide updates as I learn more.

For more information, visit the KY Tobacco Disease Information Page online at www.uky.edu/Ag/kpn/kyblue/kyblue.htm.

CORN

COMMON RUST

by Paul Vincelli

As is typical for Kentucky, symptoms of common rust can be found on corn leaves in many fields at this time of the season. Rust diseases appear as tiny, rust-colored pustules on leaves. Two rusts can attack corn in Kentucky: common rust and southern rust.

Rust pustules are circular to oval, golden-brown to cinnamon brown, and up to 1/8 long. Pustules of **common rust** are widely scattered on leaves and are common on both upper and lower leaf surfaces. Pustules of **southern rust** tend to occur in dense congregations on upper leaf surfaces, with few on lower surface. For a figure showing a side-by-side comparison of the two rusts, see page 37 of the Extension publication *ID-139: A Comprehensive Guide to Corn Management in Kentucky*, available at <http://www.ca.uky.edu/agc/pubs/id/id139/DISEASE.PDF>. Leaves turn yellow and dry up when severely infected by rusts.

Spores of both fungi are carried on springtime winds from southern areas of the U.S. Common rust is active during cool (60°F to 75°F), humid weather; southern rust is most active during warm (80°F), humid conditions. Both fungi infect leaves when spores are present and leaf surfaces are wet. Both are potentially more severe in late plantings. Greatest yield loss occurs in susceptible hybrids when outbreaks begin during early grain fill.

Common rust rarely causes economical loss in field corn in Kentucky, because of good resistance levels in commonly grown hybrids. In contrast, an aggressive outbreak of southern rust in late-planted crops may reduce yield and stalk strength in a grain crop and quickly desiccate silage corn.

VEGETABLES

VEGETABLE INSECTICIDE UPDATE

by Ric Bessin

There have been many new insecticides that have received federal section 3 labels this past spring and summer that are now available to vegetable producers. Some of these represent new formulations, others are completely new chemistry that provide additional rotational alternatives to manage insecticide resistance with vegetable pests. As these are new uses, they are not included in the current version of ID-36. Here is a listing of these new insecticides and the crop groups for which they are labeled.

Coragen (a.i.: *rynaxypyr*) – This Dupont insecticide is formulated as a 1.67 SC liquid. It is labeled to control a variety of Lepidoptera including armyworms, cabbage looper, diamondback moth larvae, imported cabbageworm, cross-striped cabbageworm, tomato fruitworm, European corn borer and hornworms on Brassica leafy vegetables (3 day PHI), cucurbits (1 day PHI), leafy vegetables (1 day PHI), and fruiting vegetables (1 day PHI). Note for each of these crop groups, it is labeled for both foliar and drip application, as this product has systemic action against the pests listed above. Note that there are some plant back restrictions listed on the label. This insecticide belongs to the IRAC group 28.

Synapse (a.i.: *flubendiamide*) – This Bayer Crop Sciences material is formulated as a 24% WG and bears the signal word of “Caution.” It is labeled for a variety of Lepidoptera including armyworm, cabbage looper, melonworm, tomato fruitworm, European corn borer, hornworms, diamondback moth, and imported cabbageworm. It is used as a foliar spray on cucurbits (1 day PHI), fruiting vegetables (1 day PHI), Leafy vegetables (1 day PHI), and Brassica leafy vegetables. Note that there are some plant back restrictions listed on the label. This insecticide belongs to the IRAC group 28.

Movento (a.i.: *spirotetramat*) – This Bayer Crop Sciences material is formulated as a 2 SC and bears the signal word of “Caution.” It is labeled as a foliar spray against a number of sucking insects including aphids, whiteflies, and psyllids on Brassica leafy vegetables (1 day PHI), fruiting vegetables (1 day PHI), leafy vegetables (3 day PHI), and tuberous and corm vegetables (1 day PHI). Note that there are some plant back restrictions within 30 days of application that are listed on the label. This insecticide belongs to the IRAC group 23.

Brigadier (a.i. *bifenthrin* and *imidacloprid*) – This FMC product is formulated as a premix with two active ingredients with a total of 2 pounds a.i. per gallon. The label bears the signal word of “Warning.” It is labeled as a foliar spray against a wide variety of sucking and chewing insects on Brassica head and stem vegetables (7 day PHI), Brassica leafy vegetables (7 day PHI), eggplant (7 day PHI), head lettuce (7 day PHI), peppers (7 day PHI), Cilantro (7 day PHI), potato (21 day PHI), spinach (40 day PHI), succulent beans (7 day PHI), tuberous and corm vegetables (21 day PHI), and tomato (7 day PHI). Note that there are some plant back restrictions listed on the label. This product belongs to both the IRAC groups 3 and 4A.

Brigade (a.i. *bifenthrin*) – Thi FMC product is formulated as 2 pounds a.i. per gallon as an EC. It is labeled against a wide variety of chewing and sucking insect and mite pests

on sweet corn (30 day PHI), succulent peas and beans (3 day PHI), Brassicas (7 day PHI), Cucurbits (3 day PHI), head lettuce (7 day PHI), spinach (40 day PHI), cilantro (3 day PHI), dried beans and peas (7 day PHI), okra (7 day PHI), leafy Brassicas and turnip greens (7 day PHI), tuberous and corm vegetables (21 day PHI), fruiting vegetables (7 day PHI), and tomato (1 day PHI). Note that there are some plant back restrictions within 30 days of application that are listed on the label. This insecticide belongs to the IRAC group 3.

Capture LFR (a.i. *bifenthrin*) - This FMC product is formulated to mix directly with liquid fertilizer for control of soil insect pests and contains 1.5 pounds active per gallon. It is labeled as a soil application to control a number of soil-associated insect pests including wireworms, white grubs, root aphids, seedcorn maggots, flea and cucumber beetle larvae, cutworms, armyworms on Brassicas, cilantro, cucurbits, dried beans and peas, eggplant, head lettuce, leafy Brassicas and Turnip greens, okra, peppers, spinach, succulent peas and beans, tomatoes, tuberous and corm vegetables. This insecticide belongs to the IRAC group 3.

Zeal Miticide (a.i.: *etoxazole*) - This Valent product now has a federal supplemental label for use on melons (including cantaloupe, musk melon, and watermelon) against two-spotted spider mite. Applications have a 7-day PHI. This miticide belongs to the IRAC group 10B.

SHADE TREES & ORNAMENTALS

SAWFLIES - LATE SEASON PINE DEFOLIATORS by Lee Townsend



Sawflies are members of the same insect order (Hymenoptera) that includes ants, bees, and wasps. The larval stage

has a caterpillar-like body that may be brightly marked with stripes or spots. Some species change significantly in appearance as they grow, making identification confusing. Large numbers of sawflies can strip the needles from a tree in a short period. Several species can be found on pines in Kentucky.

The European pine sawfly (left) is one that is active now. These olive green larvae with black stripes and shiny black heads can feed on many pines including Scotch, Eastern white, and Austrian. They feed on the previous year's needles and do not damage new needles. These

sawflies can feed on twig bark, causing growth deformities. Trees are seldom killed by the feeding of this insect during a single season. Full grown larvae are about 1 inch long.

The introduced pine sawfly has a black head and black body that is covered with yellow and white spots. They prefer the needles of eastern white pine but also will eat Scotch, red, Austrian, jack, and Swiss mountain pine. Short leaf and Virginia pines have been attacked but usually are not heavily damaged.

Feeding is most severe in the crown to upper half of the tree but heavily infested trees can be completely defoliated. If this occurs after the winter buds have formed, many branches or even the entire tree can be killed. There are two generations each year. The second generation of this sawfly feeds on both old and new needles during August and September.

Sawfly populations are usually controlled by combinations of natural enemies, predators, starvation, disease, or unfavorable weather. Outbreaks can occur when natural control does not produce high mortality. Regular inspection of pines will help to detect sawfly infestations before the larvae reach a size that can cause significant defoliation. Since eggs are laid in clusters, feeding by groups of larvae can cause unsightly damage to ornamental or landscape plantings, as well as nursery trees

If only a small number of colonies are present and accessible, they can be handpicked, shaken off, or pruned from the tree and destroyed. Some of the insecticides that can be used for sawfly control are listed by the common name of the active ingredient followed by an example brand name. Acephate - Orthene Turf, Tree & Ornamental Spray, bifenthrin- Ortho Houseplant & Garden Insect Killer, carbaryl - Sevin, cyfluthrin - Bayer Multi-Insect Killer Concentrate, esfenvalerate - Ortho Garden & Landscape Insect Killer Concentrate, and permethrin - Ortho Tree, Shrub,, and Lawn Spray. Although sawflies look like caterpillars, they are not susceptible to Bt sprays.

EUROPEAN HORNETS HITTING FRUIT AND TREE BARK by Lee Townsend

The European hornet is a large brown heavy-bodied wasp with yellow and orange markings. It prefers to nest in hollow trees. Normally, European hornets feed on other insects - caterpillars, grasshoppers, flies, etc. At this time of year, they look for carbohydrates and begin to attack fruit and trees and bushes (especially ash and lilac). The hornets can chew into fruit and chew off the bark and

girdle branches as they create wounds from which they collect sap. European hornets have a long workday, they will continue to fly into early evening so damage occurs over a short period of time.

Sanitation, picking over-ripe fruit and fallen fruit, can help reduce the problem but the hornets will feed on fruit that is not yet ripe. Netting may be a practical alternative in some cases to exclude the insects. There are limitations with insecticides due to harvest intervals, and the potential for creating problems with secondary pests, such as mites. Also, hornets are at peak numbers now so even if most visitors are killed, other hornets are likely to find the resource and exploit it.

CICADA KILLER WASPS by Lee Townsend



Cicada killer wasps are among the most intimidating insects that people encounter. It is unnerving to see a 2-inch long wasp show any interest in you at all, let alone hover in your face. It's probably a stingless male if that is any consolation. They challenge most anything that

comes in to their area but are not equipped to do anything about it.

Females can sting but they rarely show any sign of aggressive behavior. Their sting has been described as an initial sharp pain followed by numbness, slight swelling, and stiffness that last for about a week. However, some individuals may have an allergic reaction to the venom.



The presence of cicada killer wasps in an area occurs when the site fulfills three main needs: well-drained, light-textured soil; full sunlight; and nearby trees that harbor annual cicadas. As long as

those conditions are met, these ground-nesting wasps will

stay there and thrive. Attempts to control them are generally only partially successful for several reasons: 1) the site remains attractive to new settlers even if most the original inhabitants have been vanquished, 2) immature stages of wasps will not be affected by the treatment and will survive to emerge next year.

Cicada killers are solitary wasps but colonies of individual burrows will build up over time. Ohio studies of several colony sites showed numbers could vary from 1 or 2 burrows to over 370 in a one-acre site. This large colony was known to have been active for at least 9 years.

Cicada killers dig tunnels that are 6 to 10 inches deep and extend 12 to 18 inches horizontally to cells where young are raised on captured cicadas. The larval stage of the wasp will spend the winter there and pupate in the spring. The adults will emerge the following year as cicadas become active.

Soil is thrown or pushed out of the tunnel opening during tunnel construction, frequently forming a U-shaped mound around the entrance. The excavations from under this sand-based brick patio are impressive but are beginning to destabilize the area. Several females apparently are using the same entrance and the results of their digging are piling up. Cicada burrows also were present in the loose soil around flower beds and landscape plantings. The extensive activity here was the result of a location that met the insect's requirements and several years of build-up time.

Cicada killer control is desirable in situations where physical damage is occurring or the presence of the insects is causing significant distress. Sevin (carbaryl) dust, applied in the burrow opening is a good method to try but keep expectations realistic.

HOUSEHOLD

SPIDER WARS by Mike Potter

Numerous calls are received this time of year about spiders. Typically, the caller wants to know if the spider they've seen is dangerous, and what — if anything — should be done in terms of control. Many different kinds of spiders live in and around buildings. Some, such as the house, cellar, and garden spiders, construct webs to help entrap their prey. Others, like the wolf spider, roam freely and make no webs. The vast majority of spiders are harmless and in fact beneficial because they prey upon flies, crickets and other insects. They generally will not attempt to bite humans unless held or accidentally trapped against the skin. Most spiders have fangs too

small or weak to puncture human skin. Of the hundreds of species found in Kentucky, only the *black widow* and *brown recluse* are dangerous. Fortunately, both are relatively uncommon, and have markings that can be used to distinguish them from other non-threatening species.

Although most spiders are harmless, few people are willing to tolerate them inside the home. Their unsightly webbing and fecal spots outweigh the beneficial aspects of spiders to most homeowners. This column provides practical tips on spider control for concerned clients.

General Control Measures (all species)

1. Routine, thorough house cleaning is the most effective way to eliminate spiders and discourage their return. A vacuum and broom are the householder's most useful tools for removing spiders, webs, and egg sacs. Egg sacs in particular should be removed since each may yield hundreds of new spiders.
2. Spiders prefer quiet, undisturbed areas such as closets, garages, basements, and attics. Reducing clutter in these areas makes them less attractive to spiders.
3. Large numbers of spiders often congregate outdoors around the perimeter of buildings. Moving firewood, scrap lumber, and debris away from the foundation can reduce migration indoors. Shrubs, vines and tree limbs should be clipped back from the side of the building. Maintaining a vegetation-free zone next to the house also lowers the moisture content of the foundation and siding, making them less attractive to termites, carpenter ants, rodents and decay.
4. Install tight-fitting window screens and door sweeps to exclude spiders and other insects. Inspect and clean behind window shutters, and inside the orifices of gas barbecue grills.
5. Consider installing yellow or sodium vapor light bulbs at outside entrances. These lights are less attractive than incandescent bulbs to night-flying insects, which, in turn, attract spiders.
6. To further limit spider entry from outdoors, insecticides can be applied as a "barrier treatment" around the base of the foundation. Pyrethroid insecticides (e.g., Spectracide Triazicide (lambda cyhalothrin), Bayer Advanced Multi-Insect Killer (cyfluthrin), Ortho Home Defense Max (bifenthrin)) are quite effective, but may need to be reapplied periodically throughout the summer. Pay particular attention to door thresholds, garage and crawl space entrances, and foundation vents.

Brown Recluse/Black Widow

Both of these spiders are potential health threats. Most bites occur while putting on a shoe or piece of clothing where a spider has hidden, or while sorting through boxes, clutter, etc.

The female black widow is about 1/2-inch long, shiny black and usually has a red hourglass mark on the underside of the abdomen. In juvenile spiders, the hourglass mark may be reduced to two separate spots. Most adult brown recluse spiders are about the size of a dime to a quarter with legs extended. Coloration ranges from tan to dark brown, and the abdomen and legs are uniformly colored with no stripes or mottling. For laypersons, the most distinguishing feature of a brown recluse is a dark violin-shaped mark on its back, with the neck of the violin pointing toward the rear (abdomen) of the spider. Closer examination under magnification will reveal only three pairs of eyes toward the front of the head – most other spiders have eight eyes. Although both the black widow and brown recluse have distinctive markings, a "spider is a spider" to most people. Concerned homeowners or victims of spider bites should be advised to bring the specimen in for confirmation.

Spider bites are difficult to diagnose, even by physicians. Black widow venom is a nerve toxin and its effects are rapid. The victim suffers painful rigidity of the abdomen and usually tightness of the chest. Victims should seek medical attention promptly. The bite of the brown recluse is usually painless until 3 to 8 hours later when it may become red, swollen and tender. Later the area around the bite site may develop into an ulcerous sore from 1/2 to 10 inches in diameter. Healing often requires a month or longer, and the victim may be left with a deep scar. Prompt medical attention can reduce the extent of ulceration and further complications. Not all brown recluse bites result in ulcerations and scarring.

The brown recluse may be found living indoors or outdoors. Black widows are more often encountered outdoors. *Thorough inspection of cracks, corners, and other dark, undisturbed areas with a bright flashlight is an essential first step in determining the location and extent of infestation.* Indoors, pay particular attention to basements, attics, crawl spaces, closets, under/behind beds and furniture, inside shoes, boxes of stored items, and between hanging clothing. Brown recluse spiders also may be found living above suspended ceilings, behind baseboards, and inside ductwork or floor/ceiling registers. Another way to detect infestations in these areas is to install several *glue boards* or *sticky traps*. Designed to capture mice and cockroaches, these devices can be purchased at grocery or farm supply stores. Placed flush along walls and in corners, they are useful monitoring tools and capture large numbers of spiders.

INSECT TRAP COUNTS

August 8-15, 2008

Brown recluse and black widow spiders also live outdoors in barns, utility sheds, woodpiles, and underneath lumber, rocks, and accumulated debris. To avoid being bitten, wear work gloves when inspecting inside boxes or moving stored items.

Each of the management tips (1-6) mentioned above for spiders in general are useful for the black widow and brown recluse. Removal of unnecessary clutter is especially helpful in making areas unattractive to these pests. Indoor infestations of brown recluse and black widow also warrant treatment with insecticides. Application should be directed into areas where spiders are living, contacting as many spiders and webs as possible.

Infestations of brown recluse or black widow spiders often require specialized skills, persistence and equipment to eradicate. Because these spiders are potential health threats, it is often prudent to call a professional.

For detailed information about brown recluse spiders, consult the publication on the entomology department web site.

DIAGNOSTIC LAB-HIGHLIGHTS

by Julie Beale and Paul Bachi

During the past week, the PDDL received samples of potassium deficiency, Rhizoctonia root rot, Phytophthora root/stem rot, brown spot and sudden death syndrome on soybean; black shank, blue mold, target spot and frog-eye leaf spot on tobacco.

On fruits and vegetables, samples were diagnosed with double blossom on blackberry; Phytophthora collar rot, bitter rot and cedar-apple rust on apple; bitter rot on pear; anthracnose on bean; bacterial spot on pepper; gummy stem blight on watermelon; stinkbug injury and catfacing on tomato; Alternaria leaf blight on cantaloupe and pumpkin, as well as potyvirus on pumpkin.

On ornamentals and turf, we have seen Pythium root rot on chrysanthemum; black spot and rosette disease on rose; Gloeosporium leaf spot on birch; bacterial scorch and squirrel injury on maple; Actinopelte and Marsonnina leaf spots on oak; Phytophthora root/collar rot on chestnut; anthracnose on bentgrass; summer patch on annual and Kentucky bluegrass; and zoysia root decline (Gaeumannomyces) on zoysiagrass.

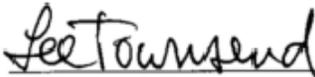
► *Princeton, KY*

Black cutworm	14
True armyworm.....	18
Corn earworm.....	44
European corn borer	0
Southwestern corn borer	5
Fall armyworm.....	6

► *Lexington, KY*

Black cutworm	11
True armyworm.....	11
Corn earworm.....	1
European corn borer	10
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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