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ANNOUNCEMENT

ACTIGARD LABELING DELAYED - BE CAREFUL WITH DEMONSTRATION PLOTS.
By William Nesmith

A section 3, federal, label was expected in March for the plant inducer Actigard (induces disease resistance in otherwise susceptible plants). On May 9, I was informed by a Novartis representative that labeling of Actigard had been significantly delayed at EPA. It was implied not to expect labeling in time for Actigard to be used for this crop season. The reason given for the delay was administrative-backlog, not environmental problems, because the technical review committees have given "favorable" reports.

There is considerable interest in this product in Kentucky for a number of good reasons, so this delay is already having impact. Apparently, there was significant discussion of Actigard at some grower-level meetings about the state this winter, and many had planned to use this product in tomatoes and tobacco.

SPECIAL WARNING: County Extension Agents, tobacco specialists, vegetable specialists, and dealers planning to use Actigard in on-farm, educational projects need to realize that an EUP (Experimental Use Permit) does not exist for this product. Therefore, it is not legal to use it in grower-level educational events, until it has either an EUP or a label. Any plots already established will need to be handled as "crop-destruct. The only authorized use at this time is for research. Educational and advertisements are not authorized at this time.

TOBACCO

CURRENT BLUE MOLD STATUS
By William Nesmith

BLUE MOLD ADVISORY: The statewide advisory issued in early May remains in place for tobacco transplant production in Kentucky and fields set with southern transplants. The probability that viable spores arrived via airborne means from the known sources of blue mold activity have been low. However, where "ready-to-set" transplants from the southeast were used in recent weeks, there is significantly higher potential of infestation. Preventive fungicide sprays (Ferbam or Dithane) at weekly intervals should be maintained in all transplant production systems to aid in the control of fungal diseases including blue mold. Transplants are too valuable and too vulnerable to rely on a warning system for timing of fungicide sprays. In

contrast, field applications of fungicides are not recommended at this time for sites set with locally grown transplants. However, where southern transplants are being used, foliar applications of Acrobat MZ at 2.5 /100 gallons of water should be maintained at weekly intervals, adjusting the concentration and volume of fungicide to the stage of growth, as per the label. Centers of active blue mold remain in Florida, Georgia, and North Carolina. The population of wild tobacco in Texas is very low this year and blue mold has not been detected on the populations examined.

POAST HERBICIDE FOR TRANSPLANTED TOBACCO
by J. D. Green

A 24(c) registration for use of POAST herbicide on tobacco fields in Kentucky has been renewed for another season. Highlighted below is more specific information about this registration and use of POAST for transplanted tobacco.

CROP STAGE: POAST can be applied any time after transplanting. The only restriction is to avoid applications within 42 days of harvest.

WEED SIZE: POAST is a selective herbicide for control of grasses. In general, apply when grasses are small (6 to 8 inches) and actively growing. The exception would be shattercane and johnsongrass, which should be approximately 18 to 25 inches at time of first application.

RATE: Apply POAST (1.5 pt/A) plus an Oil Concentrate (2 pt/A). Spray volume can range from 5 to 20 GPA (gallons per acre) with an optimum at 10 GPA. For adequate control insure good spray coverage. For rhizome johnsongrass more than one applicaiton may be needed. Make the first application of POAST (1.5 pt/A) when johnsongrass plants are 20 to 25 inches; followed by a second application of POAST (1 pt/A) when regrowth is 12 inches. A maximum of 4 pt/A of POAST can be applied per season to tobacco.

SPOT TREATMENT: In some situations a spot treatment with a back-pack sprayer or other high volume sprayer may be the desired method of application. To apply, prepare a 1% to 1.5% solution of POAST plus a 1% solution of Oil Concentrate. This is equivalent to POAST 1% (1.3 oz/gal) or 1.5% (2 oz/gal) plus Oil Concentrate 1% (1.3 oz/gal). Apply spray solution to the grass foliage on a spray-to-wet basis.

CULTIVATION: The label states "do not cultivate within 5 days before of 7 days after applying POAST".

OTHER INFORMATION: Keep in mind that POAST on tobacco is currently allowed as a 24(c) pesticide registration. This supplemental label should be in the hands of the applicator at time of application. The continued availability or registration for the use of POAST on tobacco fields in subsequent years will depend on a renewal of the 24(c) registration or a full federal label.

Can POAST PLUS be used instead of POAST? The only product labeled for use on tobacco is POAST. Both POAST (1E) and POAST PLUS (1.5E) contain sethoxydim (the active ingredient); however, the amount of sethoxydim in each product formulation is different.

CORN

ARMYWORMS IN CORN
by Ric Bessin

Continue to monitor for cutworm activity, particularly in no till corn. The armyworm, or true armyworm, is a common early season pest that can cause occasional losses. In no-till or reduced tillage systems, an infestation may cover the entire field. Cool, wet, spring weather usually favors armyworm development. This spring we have had high numbers of moths captured in pheromone traps.

The full-grown 1-1/2 inch armyworm has a greenish brown body with a thin stripe down the center and two orange stripes along each side. The head is brown with dark honeycombed markings. Feeding is usually confined to leaf margins, but occasionally they may strip the entire plant leaving only the midrib of the leaves. During the day, armyworms are found in the soil or underneath ground cover. Corn can usually recover from light to moderate feeding by armyworm without significant yield loss. However, severe damage, particularly if the growing bud is injured, can cause significant loss in yield.

If damage is observed while scouting, look on the ground for armyworms or their black pepper-like droppings littering the ground. To sample for armyworms, examine 20 consecutive plants in each of at least 5 random locations in the field. Note the number of plants with the characteristic damage and the size of the larvae.

In conventional tillage, infestations usually begin

around the field margins adjacent to small grains or grassy strips. These areas should be scouted first. If armyworms are present, then determine how far the infestation extends into the field. Entire fields are rarely infested and armyworms can be controlled by treating just a portion of the field.

Before deciding whether to treat for armyworms with an insecticide there are a few things to consider. First, what sizes are the armyworms. If the armyworms are longer than about 1-1/4 inch they have completed most of their feeding. Controlling larvae of this size is not profitable because the damage is already done. Control actions in corn are recommended when armyworms average between 1/2 and 3/4 inches and the entire field averages 35% infested plants or 50% or more defoliation is seen on damaged plants.

Armyworms may be found that have small cream colored eggs behind the head. These are eggs of a parasitic wasp. These eggs will hatch and the fly larva will kill the armyworm. When scouting for armyworms, ignore larvae in your counts that have been parasitized or otherwise do not appear healthy.

CORN ROOTWORMS TO HATCH SOON
by Ric Bessin

The general rule for corn rootworm is that egg hatch coincides with the appearance of the first lightningbugs or fireflies at night. Well, this past weekend lightningbugs were active in the evening in eastern Kentucky. Corn rootworm hatch is due anytime.

WHEAT

WHEAT DISEASE UPDATE
by Don Hershman

It has been a very interesting spring for wheat diseases in Kentucky. The following article is meant to update you on the current wheat disease situation.

Wheat Viruses:

Wheat streak mosaic (WSM) has taken center stage this season. This virus disease, which is transmitted by the wheat curl mite, has not been seen in Kentucky since 1988. The bulk of the disease is restricted to the southern portion of the state, and is especially prevalent in Warren, Simpson, and Fulton Counties. The wheat crop is now far enough along throughout Kentucky that WSM should not cause significant additional damage to wheat outside the most severely affected counties. For the most part, severely diseased fields were destroyed and planted to either corn or soybean. But, overall, the acreage destroyed has not been large, perhaps 1% of the total wheat acreage planted.

Another virus disease, wheat spindle streak mosaic (WSSM) has been very common this spring, especially in more northern counties in the state. In some fields the symptoms have been very dramatic in regards to the intensity of the streaks in affected leaves. However, affected plants look robust, are not stunted, and tillering has been little affected. Thus, as long as the grain fill period is reasonably hospitable, I do not expect to see serious yield damage due to WSSM, even though grain test weights may be impacted. Since resistance is WSSM is fairly common, it should be a simple matter for farmers to avoid highly susceptible varieties in the future.

Barley yellow dwarf, a virus disease transmitted to wheat by the various species of aphids, has been minimal this year. Most fields have hits of the disease here and there, but I am not aware of any seriously diseased fields.

Foliar and Head Diseases Caused by Fungi:

Leaf rust is the disease which is causing me the greatest concern at the moment. Large numbers of spores must have blown into Kentucky and infected many fields about 2 weeks ago. This is evident by the severity of infection in unprotected fields ranging from Hickman to Owensboro. All fields in the state are past the point where any fungicide can be legally applied. So, from this point on it is a “wait and see” game. However, many farmers will be very glad that they made applications of Tilt or Quadris when they did. I have seen some excellent examples of leaf rust control with both those fungicides.

Early this spring, Septoria leaf spot and tan spot developed to greater-than-normal levels due to the cool weather. But as is normal for this time of year, Stagonospora leaf blotch appears to be picking up steam in many fields. Significant glume blotch on the heads is a distinct possibility in those fields. This is especially true for fields which were not protected with a fungicide during and immediately following crop head emergence.

Most of the state appears to have dodged the Fusarium head blight (head scab) bullet. I suspect that most fields in the state are past the most susceptible stage for infection by the causal species of Fusaria (i.e., flowering). It is my experience that the maximum level of Fusarium head blight is usually evident within two

weeks of the end of the flowering period. Some fields are already past this point. For others it is still a waiting game, but I do not believe the weather has been very favorable in Kentucky to support extensive Fusarium head blight development except in scattered fields.

Bacterial Black Chaff:

I am receiving reports that the bacterial disease, black chaff, may be extensive in some fields throughout the state. Black chaff is rarely a cause for alarm, but it is often confused with the much more serious disease, glume blotch. The two diseases are easily differentiated in the field. Black chaff will be evident as dark purple streaks on the veins of glumes. Glume blotch is evident as gray and gray-brown blotches that develop at random on glumes. Infections often start at the tips of glumes, but in time entire individual glumes may become involved. When glume blotch is severe, the associated grain will be shriveled.

SHADE TREES & ORNAMENTALS

DEAD OR DYING LANDSCAPE TREES
by John Hartman

County Extension Agents, arborists , and homeowners in central and eastern Kentucky are observing more than the usual number of dead and dying landscape trees this spring. This corroborates the observations made by Jeffery Springer, U.K. Extension Forester, who recently released information on the role of drought in sparse foliation and mortality of Kentucky forest trees. (See accompanying article.) Much of what was said about forest trees can be applied also to landscape trees. In the landscape, in addition to failure to leaf out in spring, we observed some trees with enough energy to push out some new growth and a few leaves, but which then promptly died.

What trees are showing symptoms of drought injury? In the landscape and along streets and highways, many needled evergreens have suffered drought-related death. In the March 20 issue of this newsletter, a discussion of drought effects on pine was presented. Other conifers are also in trouble. On a recent trip to Natural Bridge State Park with the plant pathology class, we observed numerous hundred-year old hemlocks dying, apparently from drought. Examinations of increment cores by Dr. Louis Shain, retired forest pathologist, confirmed that little summer wood was laid down by these trees last year - most likely due to drought.

In the landscape and along streets and highways there are many broad-leaved deciduous trees that are also suffering drought-related symptoms. Sparse foliage, branch dieback, and tree death can be observed in ash, crabapple, dogwood, hackberry, honey locust, redbud, sycamore, tulip poplar and many other trees. Note that scab-susceptible flowering crabapples and sycamores, ravaged by anthracnose the past several years are showing dieback and death following drought. These trees would have skimpy carbohydrate reserves because they did not have healthy foliage during an entire season for the past several years. Drought stress would further deplete the carbohydrate reserves of these trees and compromise their ability to defend themselves from attack by insects and fungal pathogens. Some of the weakened trees listed above are being invaded by opportunistic pathogens which cause root rot, butt rot, and canker diseases. In the January 10 issue of this newsletter, an accounting of the landscape tree diseases that might increase due to drought was presented.

FOREST TREES

DEAD AND DYING WOODLAND TREES
by Jeffrey Springer, U.K. Extension Forester

The effect of last summers drought is now becoming apparent in forests throughout Kentucky. The dead and dying trees that are noticeable in woodlands throughout the state are, by in large, a result of last years severe drought. Forest trees are in competition with one another for water. When extreme conditions occur, as they did last year, some trees will not receive enough water to keep all of their roots and branches alive.

It is useful to consider stressed trees falling into 1 of 3 categories. In the most severe cases, the entire tree died in the fall or winter. However, this was not noticeable until this spring when the trees did not produce leaves. The second category is less severe, where only some of the roots and branches died. Many of these trees have less than their normal quantity of leaves and their crowns look sparse. Whole branches, branch tips or sections of branches may have died. The future of some of these trees will depend upon the amount of rainfall this summer. If we have less rainfall than normal some of these trees may die. This may occur later in the summer or over the course of the next several years. Although such trees may linger some years before finally dying, in the context of a several hundred year lifespan for a tree this could be regarded as a rapid decline. The final category are trees that have been stressed but are showing no outward signs of a problem. This last category applies to over 90 percent of the trees in our woods. Few trees totally escaped the effects of last years drought.

Unfortunately, there is nothing that can be done to revive a tree which already has died and little that can be done to help trees in the woods that are showing signs of severe stress. A wide range of species have been effected. Even trees growing in moderate to moist soils have been effected. Yellow-poplar, our state tree, commonly referred to as tulip poplar or tulip tree, even large ones are showing signs of stress. This is particularly evident in areas where they are growing among oak trees which are more drought hardy. In other woods, oaks may be dying either because they were already weakened or because other tree species were more drought hardy. It will not be uncommon to see insects or fungi attack these weakened trees. There are a number of pests which home-in on weakened trees and may ultimately kill the tree, but the drought set the stage for their demise.

In most of our woods leaving dead or dying hardwood trees does not pose a serious threat to the remaining trees. This is different from situations with some conifer species where removal of dead or dying trees is important to prevent spread of lethal insects such as the southern pine beetle. Woodland owners can scout for dead or weakened hardwood trees and harvest them if they wish to reduce losses which may occur in the future. Generally, the wood in them is still useful if they are not left to long. For trees which died this winter they should be removed now. If a harvest was being planned it would be wise to remove trees which are showing dieback or thinned crowns. For woodland owners who are not interested in harvesting their trees, or where too few trees are dying to warrant a harvest, the dying trees should be viewed as part of life in the forest. The decaying trees provide food and shelter for a number of wildlife species and other trees will replace them.

SHADE TREE INSECT NOTES
By Lee Townsend

Bagworm egg hatch is underway. A sample with a newly hatched bagworm larva came in late last week. Dipel or the Bt sprays work well on these insects. See ENT-8 for complete information on bagworm control.

Four lined plant bugs are "spotting" the leaves on landscape and garden plants, especially flowers and herbs. These are true bugs with piercing sucking mouthparts. There is a circular clear or brownish area around the site of the feeding puncture. Often, the spots are in a line. The winged adult usually is gone by the time the symptoms are apparent. If the wingless nymphs are present then the damage continues. A contact insecticide - insecticidal soap, etc. will provide control but the insects must be hit directly, there is little residual effect.

Herbs are especially vulnerable to attack and discoloration of the leaves makes them unsuitable for use.

Many galls are becoming evident now, especially on maple and oak. One example is elongate spindle shaped maple bladder galls which are caused by mites. There is no control once the galls appear and there is no harm to the leaves from their presence.

Oaks have many different gall species, including the vein pocket gall, caused by small maggots. ENTFACTS 403, 404, and 408 provide information on common galls, maple galls, and oak galls, respectively.

HOUSEHOLD

ELIMINATING CARPENTER ANTS
by Mike Potter

"I'm seeing big, black ants in my house, especially in the kitchen and bathroom. I spray the ones I see, but they keep coming back. What kind of ants are these and how do I get rid of them?" These are the questions typically asked by clients who have carpenter ants. This time of year, callers may also complain about a swarm of winged carpenter ants emerging inside their homes — a sure sign that the ants are nesting within the structure. This column will help you deal with this challenging pest problem.

The Problem

Carpenter ants vary in size and color, but are usually rather large (1/4-1/2") and blackish. Not every large black ant encountered around homes is a carpenter ant, however (see footnote* below). In addition to being a nuisance, carpenter ants may damage wood while hollowing it out for nesting. The galleries have a smooth, sandpapered appearance and contain no mud, which distinguishes them from wood damaged by termites. Shredded fragments of wood similar to coarse sawdust are ejected from the galleries, along with dead ants and bits of insects which the carpenter ants have eaten. When such accumulations are found, it's a good indication that a nest is nearby. Often, however, the excavated sawdust remains hidden behind a wall or in some other concealed area.

Carpenter ants nest in moist or dry locations, but prefer sites that are moist. Consequently, nests often occur in

wood dampened by water leaks, such as around sinks, bathtubs, poorly sealed window and door frames, leaking roofs, and within damp crawlspaces. When considering likely nesting sites, it's also important to remember that carpenter ants nest in areas other than wood. Nests commonly occur in moist, hollow spaces, like the wall behind a dishwasher, beneath insulation in the crawlspace, garage, attic, or basement, or in a hollow porch column. False ceilings, hollow-core doors, curtain rods, or even an old suitcase up in the attic may serve as nesting sites for carpenter ants.

Nests may be located indoors and/or outdoors. Ants spotted inside the home may actually be nesting outdoors in a tree stump, landscape timber or woodpile, and foraging indoors in search of food. Noticing five or more carpenter ants per day in an area of the home where there is no food, such as a bathroom or bedroom, usually indicates an indoor nest. Swarms of winged carpenter ants emerging indoors is another sign of an indoor nest, as is the sighting of ants indoors on cool or rainy days.

The potential for damage exists only when ants are nesting inside the structure. *In Kentucky, damage produced by carpenter ants is often insignificant and seldom as extensive as that associated with termites.* Nonetheless, over extended periods, large colonies can weaken studs, joists and other structural timbers.

The Solution

There are no insecticide baits available to homeowners that are consistently effective against carpenter ants. *Therefore the best – and only way – to control them is to find and treat the nest(s) directly*. This is easier said than done**.** Carpenter ants seldom travel in clearly defined ant "trails" as do many other ants. When attempting to locate a nest, focus your efforts on where most of the ants have been seen. Areas dampened by moisture, e.g., around sinks, dishwashers, chimneys, fascia boards, roof edge, and window or door frames are especially attractive to carpenter ants, although dry walls may also serve as nesting sites. The chances of finding ants will be much greater at night since carpenter ants do most of their foraging after dark.

The vicinity of a carpenter nest can often be located by placing small dabs of honey or maple syrup in the area(s) where ants have been seen. Cleanup is aided by placing the "bait" onto small squares of wax paper, or the back (non-sticky side) of pieces of masking tape. The best time to check the bait spots is at night when the ants are most active. After the ants have fed on the bait, follow them on their journey back to their nest. Be patient — eventually the ants will disappear behind a baseboard, cabinet, or into some other concealed location such as behind a wall, window, door frame or porch column.

Treat behind walls and other hidden locations where ants are entering by puffing boric acid dust into existing cracks, or drilling small (1/8") holes into suspected nest areas. With a little luck, the insecticide dust will disperse in the hidden void and contact and kill the ants. If you suspect the nest is in a wall, drill and treat at least 3-6 feet on either side of where ants are entering so as to maximize the chances of contacting the nest. As is true for most ants, carpenter ants prefer to travel along wires, pipes and edges. It often pays to inject dust into any openings around plumbing pipes and behind (not inside) the junction boxes of electrical light switches and receptacles. *Never apply insecticides directly into junction boxes or spray liquids around electrical outlets. Turn off the main circuit breaker as an additional safety precaution.*

Professional pest control firms have "dusters" specifically designed for this type of treatment. Homeowners wishing to perform treatment themselves can purchase boric acid in a ready-to-use "puffer" (squeeze bottle), or attempt to make one using an empty, dry, narrow-tipped plastic container. Don't expect to see results overnight; a week or more may be needed to eliminate the entire nest which may contain thousands of ants.

As noted earlier, carpenter ants seen in the home may actually be nesting outdoors and foraging indoors for food and water. Consequently, you may end up following the ants out into the yard, possibly to a nest located in a stump, fence, dead tree limb, or landscaping timber. Once an outdoor nest is discovered, treatment can be performed by spraying or drenching with Sevin, Dursban, diazinon, etc. If outdoor nests are suspected, inspect for ants around the foundation and siding at night with a flashlight. Like most ants, carpenter ants prefer to trail along edges and wires. Pay particular attention to the bottom edges of siding, areas around doors, windows, and where utility pipes and wires enter the structure. The sweet bait technique can again be used to trace these ants back to their nest.

Calling a Professional

Eliminating carpenter ants can be difficult and time consuming. Therefore many clients will want to call a professional. Pest control companies tackle carpenter ants in different ways. Some try to locate the nest(s) and treat only in suspected areas. Other firms take a less directed approach, opting instead to drill and treat as

many conceivable nesting sites as possible. Most companies also spray around the exterior foundation of the home, hoping to limit reinfestation. The approach which should *not* be taken is simply to spray each month where carpenter ants are seen. Knowledgeable companies will spend less time "spraying" and more time inspecting and asking the homeowner where they have seen ants, whether there have been moisture leaks, etc. *If no effort is made to locate the nest(s) or probable nest areas, the infestation will continue.* The homeowner can often assist the professional in locating nests by using the sweet bait technique discussed earlier.

Preventing Future Problems

1. Correct roof leaks, plumbing leaks, and other moisture problems which attract carpenter ants
.
2. Clip back tree limbs and branches touching the roof or siding of the house. These serve as "bridges" between ants nesting in dead portions of trees and the structure.

3. Seal cracks and openings in the foundation, especially where utility pipes and wires enter from outside.
4. Never store firewood in the garage since firewood is a prime nesting location for carpenter ants. Stack wood away from the foundation and elevate it off the ground.

* NOTE – Another large black ant often mistaken for carpenter ants in Kentucky is the black field ant. Many costly "carpenter ant" jobs are inadvertently sold to homeowners by companies that confuse these two 'look-alike' pests. A good hand lens is needed to tell the difference: viewed from the side, carpenter ants have an evenly rounded thorax (the body segment just after the head); black field ants have a thorax which in profile appears ridged or uneven. Black field ants commonly form large, low-profile, earthen mounds in the yard. Unlike carpenter ants, they do not nest within buildings, although they may wander indoors in search of food. The solution to black field ants is simply a mound drench with Sevin, Dursban, etc.

LIVESTOCK

HORSE FLY AND DEER FLY CONTROL DIFFICULT
By Lee Townsend

Horse flies are large flies that range from 3/4" to over 1-1/4" long. They are strong fliers that can move long distances from their breeding sites. Horse flies inflict painful bites and can make animals miserable and difficult to work or handle. On top of that, they are very difficult to control.

Horse flies stay on animals only long enough to feed. Females slash the skin with their broad, blade-like mouthparts, then lap up the blood that wells up from the wound. Work recorded in a USDA bulletin estimated that horse flies would consume 1 cc of blood for their meal, and that 20 to 30 flies feeding for 6 hours would take 20 teaspoons. This would amount to a quart in 10 days. While horse flies are rarely present in these numbers in Kentucky, only a few determined flies can cause animals to run wildly to escape attack.

Adults spend only a small amount of time on animals so they may not receive a lethal dose of any insecticide that is applied. Frequent applications of pyrethrins or pyrethroid insecticides (2 to 4 day intervals) during the peak of the season may provide some reduction in attack by these biting flies. They prefer sunny areas so allowing animals access to shade or barns can give them means of escaping attack.

A combination of factors, including movement, silhouette or color, CO2 and/or odor attract horse flies to animals. While repellents or insecticidal sprays may provide some temporary relief or protection, the flies still locate the animals and attempt to feed. Fly pressure remains constant and the flies will resume feeding as soon as the material reaches a tolerable level on the animal. Reapply treatments as necessary and provide some shelter that the animal can enter if possible.

Horse fly eggs are laid in batches of up 1,000 on vegetation in marshy areas or along streams. The larvae are aquatic or semiaquatic and may take 2 to 3 years to reach the adult stage. The larval stages of these flies live in moist, shaded areas in the soil. Areas along creeks, ponds, and wetlands provide excellent breeding sites which are too diffuse and environmentally sensitive to treat with insecticides.

RAINFALL AND FLIES
By Lee Townsend

Fly maggots develop in moist to wet organic matter. Frequent rains this spring have kept breeding sites in good condition for house flies and stable flies, species which are chronic problems around barns, dairy lots, and milk houses. House flies are an annoyance at best and a potential pathogen vector at worst. Stable flies are blood feeders with painful bites that can cause severe discomfort to animals. Their role in economic losses is less clear.

House flies breed in fresh manure, house flies and stable flies breed in manure mixed with dirt, feed, and straw. Warm temperatures accelerate maggot development and large fly populations can develop rapidly.

Sanitation or manure management is the key to reducing fly problems. House fly maggots can develop from egg to adult in 7 to 10 days in mid summer. Stable flies take 2 to 3 weeks for a life cycle. If breeding sites are not removed, fly problems can reach levels that cannot be managed with insecticides alone.

Remove and spread manure at 2-week intervals to promote quick drying. Small accumulations left around feed bunks, aprons, water systems, and fences and gates can produce large numbers of flies. A stocking rate heavy enough to keep manure trampled can help in eliminating some breeding sites.

Quick knockdown of a large portion of the fly population can be achieved with foggers or space sprays. Pyrethrins can be used safely around dairy and beef cattle if directions are followed. Fine mists of these products should be applied early in the morning or late in the evening when flies are concentrated on resting sites. Space sprays tend to be more effective in large operations because they can be treated efficiently with mists or fogs.

Target fly resting sites with residual sprays. Stable flies like shady surfaces when temperatures exceed 80F, house flies like sunny surfaces until the thermometer reaches about 90F. They will absorb the insecticide as the sit on the treated surfaces. These applications should be effective for from 1 to 3 weeks. Typically, they are broken down by rain, high temperatures, and or sunlight.

Residual sprays on fly resting sites can help and baits may provide some relief against house flies.
See ENT-11 and ENT-12 for premise fly control around beef and dairy herds, respectively.

Movement of flies to surrounding houses can touch off some real conflicts. ENTFACT 506 provides some information on how far house flies can move.

DIAGNOSTIC LAB HIGHLIGHTS

by Julie Beale and Paul Bachi

Disease samples in the Diagnostic lab last week included: take-all, leaf blotch, wheat streak mosaic virus, and wheat spindle streak mosaic virus on wheat; Pythium root rot and target spot on tobacco transplants; bacterial speck and Sclerotinia on tomato; plum pockets on plum; leaf spot (Heterosporium) on iris; leaf / flower gall on azalea; and anthracnose on shade trees (particularly on ash and maple).

INSECT TRAP COUNTS

UKREC, Princeton, KY --May 12-19, 2000

Black cutworm	3
True armyworm	5
Corn earworm	43
European corn borer	2
Southwestern corn borer	2

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.