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KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE
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WATCH FOR:

CODLING MOTH flight begins; Soon time to control PINE BARK ADELGIDS, a follow-up treatment may be needed in July; TOBACCO FLEA BEETLES will be active soon; SLUG activity increases; COLORADO POTATO BEETLES will be leaving overwintering sites; MAPLE PETIOLE BORERS may cause leaf drop of maples; EUROPEAN PINE SAWFLY larvae may be found feeding on conifers; GIANT BARK APHIDS on oaks and other shade trees; Feeding by SASSAFRAS WEEVILS on magnolia, poplars, tuliptrees and sassafras; SPRUCE SPIDER MITES can cause yellowing of spruce, hemlock, arborvitae, and other hosts.

TOBACCO

BLUE MOLD STATUS REPORT
by Kenny Seebold

As of April 30, 2007, the only known source of active blue mold is in western Cuba (Pinar del Rio). The threat to U.S. production areas is low at this time, according to the North American Plant Disease Forecast Center (www.ces.ncsu.edu/depts/pp/bluemold/). No active blue mold has been reported in the U.S. For more information on the status of blue mold in Kentucky and surrounding states, visit the KY Tobacco Disease Information page at www.uky.edu/Ag/kpn/kyblue/kyblue.htm.

TOBACCO

CURRENT DISEASE ISSUES OF TOBACCO TRANSPLANTS
by Kenny Seebold

The 2007 growing season has been marked by unpredictable weather – unseasonably hot temperatures in March and bitter cold in early April. To date, the bulk of problems being reported by growers have been damage from heat (early on) or cold. Plant injury from accumulated fertilizer salts has been prevalent as well. Old, poorly sanitized Styrofoam trays have brought woes to growers in the form of algae buildup, salt injury, and "drowning" due to excessively wet growth media.

Reports of disease have been relatively light to date, but are beginning to pick up as we head into warmer weather. Damping-off and target spot caused by *Rhizoctonia solani* were found at higher-than-normal levels in mid-April. In the past week, the number of cases of Pythium root rot in float systems has jumped, and we can expect to see more outbreaks as the temperatures increase. During a greenhouse visit late last week, I observed a fairly serious epidemic of blackleg on tobacco on older tobacco seedlings (they were practically ready to set). In this particular case, the main culprit appeared to be plant injury and very high levels of leaf wetness. As I mentioned in last week's article (KPN No. 1124, 4/23/07), blackleg is a fast-moving and devastating disease in the float system, particularly where high temperatures, excessive levels of nitrogen, and long periods of leaf wetness are common.

In the coming weeks, growers will need to be mindful of the potential for problems with diseases like Pythium root rot, target spot, and blackleg. Preventive applications of Terramaster EC are the best option for managing Pythium root rot at this stage, along with keeping inoculum (i.e., infested soil and plants) out of the float system. Keeping fertility at or near the recommended level of 100 ppm in the float bed will help suppress target spot and black leg. Good airflow in the float system will shorten periods of leaf wetness, and proper ventilation will pre-

vent heat buildup as well; risk from both target spot and blackleg will be minimized through these efforts. For more tips on management of diseases in the float system visit the KY Tobacco Disease Information Page at www.uky.edu/Ag/kpn/kyblue/kyblue.htm.

CAPTURE LABELS FOR SOIL INSECT CONTROL AND FOLIAR PESTS
by Lee Townsend

Capture LFR (Liquid Fertilizer Ready), a Restricted Use Pesticide, is a 1.5 pound per gallon formulation of the pyrethroid bifenthrin that can be mixed with liquid fertilizer or water and placed in the toot zone to protect plants from damage by soil insects. Capture LFR can be applied broadcast PPI or in the transplant water to control cutworms and wireworms; it also is labeled for white grubs, armyworms, and tobacco flea beetle larvae. New containers will have the tobacco label, old containers will have a supplemental label that will allow the new uses.

Capture can be applied as a foliar spray to control pests such as aphids, cutworms, tobacco flea beetles, grasshoppers, Japanese beetle, stink bugs, thrips, tobacco budworms, and hornworms. Do not apply after layby. (FMC)

CORN

FUNGICIDE CONSIDERATIONS FOR CORN IN 2007
by Paul Vincelli

Most corn producers are aware that several fungicides are labeled for control of foliar diseases of corn. Interest in these products is increasing because of the high price of corn and the expected increase in corn-after-corn acreage, which can result in increased pressure from several diseases.

Which diseases do the fungicides control?
The principal diseases that might justify a fungicide treatment in some fields are gray leaf spot and northern leaf blight. Both of these are caused by fungi that overwinter in corn residues of leaf blades and sheaths, so they are naturally more severe when corn follows corn under conservation tillage. Sometimes fungicides are marketed for their ability to control common rust and southern rust. However, these diseases typically don't justify fungicide treatment in Kentucky. Common rust usually has a very minor impact on yield in our state. Southern rust can be destructive but usually doesn't occur in Kentucky, and even when it does, it often occurs late in the season in relatively few areas.

Which fungicides?
A number of fungicides are labeled on corn, but I can simplify the situation a little by discarding the contact fungicides from consideration. Those fungicides containing *chlorothalonil, maneb*, or *mancozeb* as active ingredients are not effective enough to justify use in field corn. Fungicides containing the active ingredient *propiconazole* by itself (Tilt®, Bumper®, and Propimax®) are useful, though better, longer-lasting disease control often occurs with the strobilurin fungicides.

The strobilurin fungicides are:
1. *azoxystrobin* (found in Quadris®, and pre-mixed with propiconazole in Quilt®);
2. *pyraclostrobin* (in Headline®);
3. *trifloxystrobin* (pre-mixed with propiconazole in Stratego®).

Because of their effectiveness, the rest of this article will focus on the strobilurin fungicides. If one chooses to apply a strobilurin, the best use of the product is to make one application at tassel emergence to brown silk.

Are strobilurin fungicides effective disease control products?
Research shows that these fungicides commonly provide excellent control of gray leaf spot and northern leaf blight if these diseases are active. But this is an important "if". See below for more on this subject.

Because strobilurins control leaf diseases so well, they sometimes reduce the severity of stalk rots. The reason this for this is because stalk rot infections tend to be more severe in plants where the leaves have been damaged from disease, hail, or other factors.

Is there a yield benefit from strobilurin fungicide on corn that goes beyond disease control?
In soybeans, there is evidence that certain strobilurin fungicides change the plant's physiology in a way that sometimes enhances yield, even when diseases are not present at a level sufficient to affect yield. It is not clear exactly why this happens in soybeans, but it has been documented in carefully conducted field research. In corn, so far, such yield increases in the absence of disease have not been demonstrated, at least in the research reports I've reviewed. A yield increase from strobilurin fungicides in the absence of disease may occur in corn just like it does in soybeans, but I haven't seen proof of this yet. Thus, if you are planning to use a strobilurin, do so for the disease control benefits and not because yield might be enhanced even in the absence of disease.

How to decide whether to spray?
Unfortunately, there is no formula for deciding whether or not a fungicide application to field corn will provide an economic return. Producers must think in terms of probability, just like rolling a set of dice. So the question is, what are the factors that increase the probability that a fungicide spray will provide an economic return? A number of factors can affect this probability; these are listed in Figure 1. The more of these that are in place in a

given field, the more likely it is that an economic return will result from an application.

Most of the factors listed in Figure 1 are self-explanatory. As far as disease activity at tasseling, if lesions of gray leaf spot or northern leaf blight are approaching (or have reached) the ear leaf at tasseling, susceptible and moderately susceptible hybrids are usually at risk from the disease. (This is a rough guideline, but more research is needed to establish spray thresholds for fungicides on current corn genetics.) Information on recognizing these diseases is available in the UK Extension publication, *A Comprehensive Guide to Corn Management*, available at http://www.ca.uky.edu/agc/pubs/id/id139/INTRO.PDF.

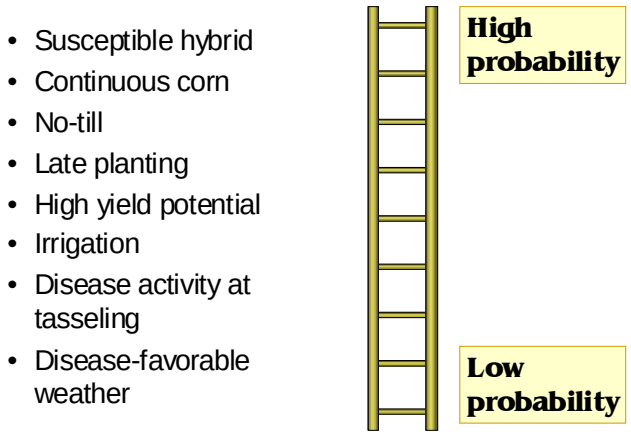

Figure 1. Climbing the "Probability Ladder": Factors that increase the probability of an economic return from a fungicide application on corn

FORAGE CROPS

MUSTANG MAX LABEL EXPANDS FORAGE USES
by Lee Townsend

Label additions for Mustang Max, a Restricted Use Pesticide, is a 0.8 pound per gallon formulation of the pyrethroid z-cypermethrin register its use on mixed stand alfalfa, the grass, fodder and hay group, and grass grown for seed. Among the labeled pests are armyworms and grasshoppers, there is a 3 day cutting or grazing interval.

FINAL ALFALFA WEEVIL THOUGHTS – DON'T FORGET REGROWTH FEEDING
by Lee Townsend

As an early spring insect, the weevil often faces erratic weather with major temperature swings and it can cope with them relatively well. Some eggs are laid in the fall but most are laid in the spring. While some of the larvae that hatched from fall-laid eggs may have been killed during the cold weather, those from spring-laid eggs have a good chance of survival.

A quick check before harvest can provide a tip-off to weevil status in the field, particularly the potential for damage to regrowth after harvest. Look for live larvae or loose cocoons of white silk in alfalfa tips at random locations over the field. Larvae or newly emerged weevil adults can feed on and slow regrowth. Larvae feed on buds while adults can chew extensively on the outer tissue of stems. There is not much information on treatment guidelines but 4 to 8 larvae per square foot may be enough to justify treatment. Check for normal bud development and plant growth about 4 to 5 days after the first cutting to see if weevils are at damaging levels. While routine stubble sprays are not needed, there are times when damage can occur. A spring like we have just experienced may be just the ticket for it.

WHEAT

IMPACT OF FREEZE DAMAGE ON DISEASES
by Don Hershman

As everyone here knows, the majority of wheat acres in the state were badly hurt by the spring freezes a few weeks back. Many fields have been, or will be, destroyed and planted to corn or soybean. However, some acres will be taken to yield because of the high current wheat price (almost $5/bu!), and many fields will be retained for seed purposes as well.

I am getting some questions about the need to spray retained fields with a fungicide. Obviously, grain yields have already been seriously compromised and if left unchecked, disease could take even more yield out of the crop. Plus, there is no sense in retaining a field for seed purposes if seed quality is not protected. Thus, it does make some sense to consider applying a fungicide under certain circumstances.

The weather between now and late grain fill will ultimately determine which diseases develop and to what extent. I can make some predictions, however.

Delayed emergence of secondary tillers could result in enhanced Fusarium head blight (FHB)/deoxynilalenol (DON) if the weather turns wet (it will be warmer) during and immediately after head emergence. Conversely, if the weather is hot and dry, FHB/DON will probably not be a problem.

Most of you are aware that Folicur and Orius have a section 18 label for FHB/DON suppression in Kentucky through May 30. Folicur is relatively inexpensive and Orius even less so, so the economics of spraying either product is reasonable. In addition, Bayer CropScience has

issued a 2ee recommendation that provides for application of a mixture of Proline 480 SC and Folicur 3.6 F for Fusarium head blight/DON suppression in Kentucky. The allowed rates are 3.0 fl oz + 3.0 fl oz/acre **OR** 4.0 fl oz + 4.0 fl oz/acre. In most studies, a Proline + Folicur mix has proven to be superior to Folicur alone when used to suppress FHB/DON. However, the cost of the mixture is considerably higher than applying Folicur or Orius, so that is a major factor to consider especially when net return on investment is so tight.

In addition to FHB/DON, I do expect to see greater incidence and severity of Stagonospora leaf and glume blotch. The latter disease (in addition to FHB) can really hurt seed quality, so where maximized seed quality is a goal, you may consider treating to control glume blotch. Increased leaf blotch is likely because the fungus that causes that disease thrives during warmer conditions, but mainly when moisture is adequate to support infection and disease development. Numerous available fungicides will do an excellent job of controlling leaf and glume blotch.

SHADE TREES & ORNAMENTALS

DIPLODIA TIP BLIGHT ON AUSTRIAN PINES IN KENTUCKY
by Amy Bateman, Plant Pathology Grad Student

Diplodia tip blight, also known as pine or Sphaeropsis tip blight, is a devastating disease world wide, but especially here in Kentucky on the exotic two-needle pines, Austrian pine (*Pinus nigra*) and Scots pine (*Pinus sylvestris*) in landscape settings and Christmas tree plantations. Over the past fifteen years, University of Kentucky plant pathologists have been surveying and studying the damage this disease has done to the Austrian pines on campus, as well as on the Scots pines of local Christmas tree farms. In the coming weeks, various aspects of this disease and the work that members of the Plant Pathology Department have done and what we have learned and discovered about this disease will be discussed.

Austrian pines are often planted in Kentucky landscapes because of their dense, green foliage and symmetrical shape. When healthy, a grouping of these trees can form an attractive year-round screen. Tip blight symptoms on Austrian pines first appear on the newly elongating candles (shoots) in late April to early May. As its name indicates, the shoot tips are killed very quickly and by late May, the diseased tips are noticeably necrotic and stunted. Needles, even before they are out of the needle sheaths start to turn a straw brown color and droplets of resin can be seen exuding from these dead needles. Some of the diseased needles may begin to break out of their sheaths, but often their growth is halted resulting in stunted, dead needles. Symptoms on Austrian pines are characterized as progressing from the shoot tip inward. Over a few days to a week all of the needles on an infected candles will turn brown and die and the candle as whole will become stunted, necrotic, and brittle from excessive resin production and exudation. The necrotic needles and excess resin can sometimes give these dead tips a gray color.

As the fungus progresses from the tip back towards the trunk, older needles will turn straw colored and die. This generally happens later in the year or the following year. Progression of the fungus can lead to branch dieback and eventually death of the tree. These symptoms typically start in lower branches of the tree and progress toward higher branches year after year until the tree dies or is so damaged it needs to be removed. On landscape Austrian pines in Kentucky, disease symptoms generally begin to appear after trees reach cone-bearing age, typically 12-13 years old.

This disease has been extremely devastating to the Austrian pines on the UK campus. Ten years ago, there were over 500 Austrian pines on campus, with more than 1/3 of these trees showing no symptoms of tip blight. Now, most of these trees have been removed because they were so heavily diseased or dead, and what few are left are all showing severe symptoms of tip blight. For example, a plot of 40 Austrian pines of varying disease levels on the southeast side of campus was surveyed in 2003. By 2006, 18 were completely dead, and the rest were so severely diseased it was difficult or impossible to observe any asymptomatic shoots.

This disease progresses rapidly, and as seen on campus, can kill a tree within only a few years. One possible reason why this disease has exploded over the past years is due to the periodic severe droughts that occur in Kentucky, especially the drought of 1999. Research suggests that tip blight incidence and severity increases with stressful growing conditions such as drought. This disease is not only killing trees on campus, but also throughout Kentucky. While traveling, it is easy to spot the dead/dying brown branches of Austrian pines lining some of our roadways. Austrian pines are often chosen for landscape trees because they grow so quickly, but unfortunately, this disease is taking them out before we ever get a chance to really appreciate them.

MANAGING ZINNIA BACTERIAL LEAF SPOT
by John Hartman

Zinnias (*Zinnia violacea*, a.k.a. *Z. elegans*) are grown in many Kentucky gardens to enhance the landscape and to provide flowers for household arrangements. These annual flowers are also grown commercially for cut flowers. Although powdery mildew and Alternaria leaf spot are commonly seen in Kentucky, bacterial leaf spot caused by *Xanthomonas campestris* pv. *zinniae* can also be important.

Bacterial infections of the foliage result in small angular reddish-brown to dark-brown spots 1/8 to 1/4 inch in diameter; leaf spots are surrounded by a yellow halo. Flower petal spotting can also be observed, especially on the most susceptible zinnia cultivars. Bacterial leaf spot is favored by warm, rainy weather and typically appears in Kentucky following a series of summer days with thunderstorms.

Disease management.

- The disease may be seedborne; purchase seeds only from a reputable supplier.
- Growers suspecting contaminated seed may consider soaking seeds before planting in a solution of 1 part bleach (sodium hypochlorite) to 9 parts water for 2 minutes. Growers may want to try this first on a small batch of seed to be sure that the treatment doesn't reduce seed viability.
- Grow disease-tolerant varieties. Recent experiments published in Plant Disease Management Reports, Volume 1 (available on-line to U.K. employees through the Plant Management Network) suggest that zinnia cultivars vary in susceptibility to bacterial leaf spot. Researchers G. E. Holcomb, A.D. Owings, and C.A. Broyles at Louisiana State University published an article entitled "Reaction of zinnia cultivars to bacterial leaf spot, 2006." To simplify their results, cultivars could be grouped as follows.
  - Resistant: Crystal White, Profusion Orange, Crystal Orange, Profusion Fire, Profusion White, Profusion Apricot, Crystal Yellow, and Profusion Cherry.
  - Susceptible: Dreamland Mix, Dreamland Ivory, Magellan Ivory, Magellan Scarlet, Zesty Lemon, Magellan Yellow, Magellan Orange, Dreamland Scarlet, and Magellan Coral.
  - More susceptible: Zesty Pink, Dreamland Yellow, Zesty Scarlet, Zesty Yellow, Magellan Cherry.
  - Most susceptible: Zowie Yellow Flame, Dreamland Rose,
    Dreamland Red, Magellan Pink, Dreamland Pink, Zesty White.
- Avoid overhead watering. Increased splashing water from sprinklers (or rain) tends to spread the bacterial disease from infected to healthy plants nearby.
- Cut-flower growers may want to consider field applications of bactericides for halting the spread of disease in the field. In yet another Plant Disease Management Reports, Volume 1 experiment, Auburn University researchers A. K. Hagan and J. R. Akridge tested several compounds for their efficacy in management of bacterial leaf spot of 'Dreamland Yellow' zinnias. The report, entitled "Control of bacterial leaf spot of zinnia in a simulated landscape planting, 2005" suggests several compounds that might be effective.
- No treatment completely controlled bacterial leaf spot disease; however, disease incidence was reduced by using Heritage 50W (azoxystrobin), Agrimycin 17 (streptomycin), Kocide 101 77W (copper hydroxide, which also caused some leaf burning), and Bayer Disease Control (tebuconazole).
- Disease incidence was not reduced by use of Immunox (myclobutanil), Sunspray Fine Oil, or Daconil Weather Stik 6F (chlorothalonil), compared to unsprayed zinnias.

Zinnia growers will want to be sure to also scout for and manage Alternaria leaf blight and powdery mildew in zinnias this summer.

PESTS OF HUMANS

LONE STAR TICKS
by Lee Townsend

The period from November to March is about the only time some stage of the Lone star tick is not a problem over much of Kentucky. Immature stages attack humans and pests from mid-March into fall and prompts questions, specifically about Lyme disease.

The following information concerning this question comes from the Centers for Disease Control website: "The lone star tick does not transmit Lyme disease. Patients bitten by lone star ticks will occasionally develop a circular rash similar to the rash of early Lyme disease. The cause of this rash has not been determined; however, studies have shown that is not caused by *Borrelia burgdorferi*, the bacterium that causes Lyme disease. The rash may be accompanied by fatigue, headache, fever, and muscle and joint pains. This condition has been named southern tick-associated rash illness (STARI). In the cases of STARI studied to date, the rash and accompanying symptoms have resolved following treatment with oral antibiotics. STARI has not been linked to any arthritic, neurological, or chronic symptoms. …

CDC is conducting studies to learn more about STARI. Physicians seeing patients with a recent lone star tick bite and an expanding rash at least 5 centimeters in diameter are encouraged to contact CDC at 970-221-6400 for more information. Patients must be at least 4 years old to participate." More information is available at http://www.cdc.gov/ncidod/dvbid/stari/stari_LoneStarConcern.html.

Ticks are most abundant in overgrown areas along trails or the edges of woods where small mammals live or where deer are active. The ticks wait on grass blades to be picked up by passing animals. After engorging themselves, they small ticks will drop to the ground, digest their meal, and molt to the next stage.

Here are some tips to protect you while outdoors: o Wear light-colored long sleeved shirts and long pants. The light color will make ticks easier to spot. Tucked pant legs will

keep ticks from reaching the skin easily. o Check yourself frequently for ticks so you can remove them before they become attached. Ticks tend to move upward on the body and attach under the arms or along the nape of the neck.
Repellents can provide protection from tick attachment. Read the product label for specific instructions - general precautions for any repellent include: o Apply only to exposed skin or clothing. o Never use repellents over cuts, wounds, or irritated skin. o Do not apply to close to eyes or mouth. o Wash repellents off after returning indoors

DEET Repellents Use just enough to cover exposed skin or clothing (do not apply to skin covered by clothing) Do not be spray repellents directly onto the face. Spray on hands first, then rub on face Do not apply to hands of small children Do not be use on irritated skin or skin damaged by cuts or rashes Do not apply repellents in enclosed areas indoors Apply every 4-8 hours, more frequent use is not necessary
Permethrin-based repellents (Permanone) Do not apply to skin! Apply only to outside of clothing before wearing - and do not saturate clothing Do not treat clothing more than once every 2 weeks Hang all treated clothing outdoors to dry for at least 4 hours before wearing Wash treated clothing at least once before treating again.

HOUSEHOLD

BATTLING CARPENTER ANTS
by Mike Potter

"I'm seeing big, black ants in my house, a few here and there. 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 with carpenter ants. 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.

Description and Habits

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). Besides 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 that 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 those that are moist. Consequently, nests often occur in wood dampened by water leaks, such as around sinks, bathtubs, shower stalls, 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, basement or attic, or in a hollow porch column. False ceilings, hollow-core doors, curtain rods, or even an old suitcase may serve as nesting sites for carpenter ants.

Nests can be located indoors and/or outdoors. Ants spotted indoors may actually be nesting outdoors in a tree stump or landscape timber, 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 are 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.

Control Tips

The traditional way to control carpenter ants has been to find and treat the nest(s) directly with an insecticide dust or spray. 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, jelly, 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 be-

hind a wall, window, doorframe 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, squeeze-type bottles. 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, etc. Once an outdoor nest is discovered, treatment can be performed by spraying or drenching with Sevin or other liquid insecticide. 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 edge 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.

Until recently, few baits were effective against carpenter ants. Do-it-yourselfers may want to try either Terro® Ant Killer II with sodium tetraborate (borax), or Combat® Ant Killing Gel (fipronil). An effective bait used by professionals (Maxforce® Carpenter Ant Gel) can often be purchased on the internet. If carpenter ants can be "enticed" to feed on the insecticide-laced baits, there's a decent chance the colony can be eliminated. The approach is especially worth trying if the location of the nest cannot be found, or is inaccessible.

Calling a Professional

Eliminating carpenter ants can be very challenging and clients may want to call a professional. Pest control companies tackle carpenter ants in different ways. Some try to locate the nest(s) and treat them directly. Other firms take a less targeted approach, treating as many potential nesting sites as possible, or spraying around the exterior foundation of buildings. The approach that *should not* be taken is simply to spray indoors, month after month, where ants were 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. The homeowner can often assist the professional in locating nests by using the sweet bait technique discussed earlier. Two excellent new carpenter ant products available to professionals are Maxforce® Carpenter Ant Gel (a carpenter ant-specific version of the Combat® bait mentioned earlier), and Termidor® spray applied around the building exterior. Either product usually will control an existing infestation.

Preventing Future Problems

1. Correct roof, plumbing, and other moisture leaks that 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.

►Another large black ant often mistaken for carpenter ants 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 to drench the mound with an insecticide.

DIAGNOSTIC LAB-HIGHLIGHTS

by Julie Beale and Paul Bachi

Tobacco transplant samples are now being seen in the PDDL, both with abiotic injuries and infectious diseases. Cold injury, phytotoxic effects from fungicide use, fertilizer burn, Pythium root rot and target spot were all seen on tobacco during the past week. We also saw samples of cold injury on wheat; weevil injury and Leptosphaerulina leaf spot on alfalfa.

On vegetable samples we have diagnosed Sclerotinia stem rot on kale (high tunnel production system) and chemical injury, low fertility and oedema on tomato transplants.

On ornamentals we have seen Pythium root rot on pansy; Phoma canker and dieback on vinca; oedema on geranium; Phyllosticta leaf spot on leucothoe; and Phytophthora root rot on white fir.

INSECT TRAP COUNTS
UKREC, Princeton KY
Kentucky—Tennessee
April 20-27, 2007

Jackson, TN
Black cutworm 4
True Armyworm 20
Corn earworm 0

Milan, TN
Black cutworm 0
True Armyworm 10
Corn earworm 0

Princeton, KY
Black cutworm 12
True Armyworm 188
Corn earworm 3

Lexington, KY
Black cutworm 6
True Armyworm 209
Corn earworm 0

This season insect trap counts will be provided for locations in Kentucky and Tennessee.
View trap counts for past seasons and the entire 2007 season at –
http://www.uky.edu/Ag/IPMPrinceton/Counts/2006trapsfp.htm
View trap counts for Fulton County, Kentucky at -
http://ces.ca.uky.edu/fulton/anr/
For information on trap counts in southern Illinois visit the Hines Report at –
http://www.ipm.uiuc.edu/pubs/hines_report/comments.html
The Hines Report is posted weekly by Ron Hines, Senior Research Specialist, at the
University of Illinois Dixon Springs Agricultural Center.