



KENTUCKY PEST NEWS

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ANNOUNCEMENTS

KPN MAILINGS TO REMAIN "BULK MAIL"

By Lee Townsend

Kentucky Pest News mailings would normally switch to First Class mail at this time of the year. In compliance with a recent administrative decision prompted by postage costs, all departmental mailings with numbers of 200 or greater must be sent using Bulk Rate postage. With 1,300 subscribers, this will affect the KPN. Much of the information in this free newsletter is perishable and delays in bulk mail delivery may make recommendations or information in the articles obsolete by the time they are received.

There are two options to continue to get the information in a timely manner.

1) **Electronic subscription** The KPN is automatically sent by email on the day it is written. If you have an email account and would like to get the newsletter in a timely manner, follow these steps:

Send a message exactly as follows:
subscribe pestnews
end

Key **Enter** to create at least one blank line and send to: majordomo194@ca.uky.edu

You will be placed on the mailing list and will receive the issues by email immediately as they are posted, usually on Monday afternoons.

2) **Internet** - Each issue of the newsletter is posted on the UK web page at the following address www.uky.edu/Agriculture/kpn/kpnhome.htm

The web version often contains color pictures and links to relevant publications. PDF versions are available for each issue, also. All issues back through 1997 are available on-line from this site. You will need to visit it each week to get the current issue. The Internet version usually is posted by noon on Tuesdays.

MAILING LIST UPDATE

Look for a form in this issue that must be filled out and returned so that you will continue to receive the KPN by mail.

ALFALFA

ALFALFA WEEVIL PREDICTIONS

By Lee Townsend

Degreeday accumulations can be used to predict the activity of some insects, such as the alfalfa weevil. The first signs of tip feeding by this insect can show up in established fields by the time 190 degreedays (base 48° F) have accumulated since Jan 1. This damage will result from feeding by eggs laid in

alfalfa stems last fall or during the past winter.

Predicted dates on which the **first** signs of feeding can be expected at specific locations are:

<u>Location</u>	<u>Date</u>
Princeton	April 2
Bowling Green	April 6
Henderson	April 7
Lexington	April 17
Covington	April 19

Damage will not necessarily appear on these dates. The winter has been cold enough to suppress egg-laying activity so most of the eggs should be laid this spring with damage appearing a few weeks later. However, it does remind us that the weevil season is on the way.

SOYBEANS

SOYBEAN CYST NEMATODE POPULATION INCREASES AND DECREASES

By **Don Hershman**

Frequently, we at the SCN Laboratory receive comments from agricultural extension agents, farmers and consultants, following submission of soil samples for SCN testing, that certain fields have much higher levels of SCN than anticipated. Usually this concern is for fields that have been out of soybean production for a few years.

The question that is usually asked is “how could SCN levels be this high?” The first part of the answer to this question is to understand the reproductive potential of SCN on a susceptible variety. The table below indicates the extent to which SCN populations can increase in a field during a single growing season.

Christian County Data

Variety	Year	At Planting Population (Pi)**	At Harvest Population (Pf)	+/- Change	Pf/Pi#
Essex*	1996	1,926	12,102	+10,176	6.28
Essex	1997	375	5,648	+5,270	15.06
Essex	1998	463	17,070	+16,607	36.86
Essex	1999	146	5,115	+4,969	35.03

* SCN-susceptible

** SCN eggs per 100cc soil

Pf/Pi>1 indicates a net population increase.

The above example shows how populations would drop as consecutive corn crops were grown (not that I would recommend such a practice). The point

These data, which are from a multi-year study we conducted in Christian County, are typical of the extent of SCN increase on a susceptible variety in Kentucky. Note, that in all years except 1996, the SCN populations present at the time of planting were below the established threshold of 500 eggs/100 cc soil. Yield data associated with the SCN data in the table will be presented next week in *Kentucky Pest News*; that discussion is beyond the scope of the current article.

As can be seen from the above table, it is not unusual to get a many-fold increase in SCN populations on a susceptible variety in a single growing season. So, the first point is to be aware of how rapidly SCN populations can increase in a field. The next factor to consider is how populations react to subsequent crops. If the next crop is corn or some other SCN non-host, the SCN population will decrease by 50-80% depending upon the year.

Let's put some math to the 1998 data from the above table as an example. If the final population after growing Essex was 17,070 eggs, the population at end of the corn season will be 3414 - 8535 eggs, depending on the growing season (i.e., 50% vs, 80% reduction). Now, if another corn crop were grown, the levels could be as low as 683 if there were two consecutive years of 80% population reduction or as high as 4268 eggs if there were two consecutive years of 50% reduction....both starting at the original 17,070 eggs after Essex. Using the same logic, the low would be 137 eggs and the high 2134 eggs after the third year of corn and 27 eggs or 1067 eggs after the fourth year. The numbers would eventually drop to a base line of 2-50 eggs which represents the nematodes that are in a state of long-term dormancy. These nematodes are why you can never eliminate SCN from a field.

is that it takes at least three years out of a susceptible crop to get SCN levels below the threshold of 500 eggs/100 cc (ca. ½ cup) soil. But if

things do not go your way and 50% rather than 80% annual population reductions are the case, then even after four years in corn, the SCN levels would still be above threshold. Of course many “in between” situations are also possible and, in fact, are likely. By that I mean one year the SCN populations may be reduced by 50% and the next year by 80 %, or somewhere in between these extremes.

In practice, most farmers would use a corn/SCN resistant soybean rotation rather than plant multiple SWCB galleries per stalk in 1999, which are fairly predictable as to their impact on SCN population declines; the impact of resistant varieties on SCN levels is much more variable. No reduction, to perhaps 25 % reduction in SCN levels are typical when SCN-resistant varieties are planted. Sometimes the reduction is greater and sometimes there is actually a net population gain. The take home point of this is that corn would represent the best case scenario as far as population reductions go. If you throw a resistant variety into the mix of the above example, then even more years may be required to get SCN below threshold. This is why we ALWAYS recommend a SCN soil test be conducted before planting a susceptible soybean. Having said the above, it is my experience that the four-year crop sequence recommended by the University of Kentucky (corn - resistant soybean - corn - susceptible soybean) typically works very well and allows farmers to effectively manage SCN and maintain high soybean yields. The focus of this article is mainly on the outlying situations.

After reading this, you may be perplexed as to why one would even want to plant a SCN-susceptible variety if SCN is in a field. The answer to this question will be the basis of an article in next week's *Kentucky Pest News*. Suffice it to say for now, that it is in your best interest to plant a susceptible soybean, when safe to do so, as part of an overall SCN management program. Most Kentucky soybean farmers do not follow this recommendation, probably because it is counter-intuitive and in opposition to most other disease management recommendations. However, next week I will show you data and discuss why occasionally planting a SCN-susceptible variety is invaluable in Kentucky (and mid-south) SCN management programs.

CORN

IS THERE ON-FARM VALUE WITH BT CORN?

By Ric Bessin, Jim Herbeck, and Doug Johnson

There was been some discussion this winter in

regional and statewide meetings regarding whether or not Bt corn has value for farmers. In all fairness this question arose outside of Kentucky, but was mentioned at some of our meetings. The question at hand is, averaged over years, does Bt corn show value to producers? My answer to that is “yes and no”. It really depends on how Bt corn is used on the farm. Bt corn in itself does not increase corn yields, it only protects against yield loss from certain insect pests. In particular, protection from injury by southwestern corn borer and European corn borer. In the absence of attack by these insects, no there is little value to farmers and it is an added expense.

In Kentucky, we can sustain economic yield loss from southwestern and European corn borer but not in all situations and not in each location in the Commonwealth. So, how do we identify locations where we are more likely to have these problems? In the past, based on historical observation, we knew that there was a slightly increased risk of European corn borer first generation attack to early planted corn. Early planting meant that it was early planted relative to much of the corn in the area and early enough that the natural protection due to DIMBOA has declined by the onset of first generation ECB attack. Late planted corn was more likely to be attacked by second generation, and harvest losses due to this generation could be high in some years. However, European corn borer populations vary in size from year to year, and typically one or two years out of five could be considered ‘bad’ years.

Now, we must consider southwestern corn borer. Since 1992, this pest has been spreading eastward and northward in the state. In 2000, it was found as far east as the counties just east of the Central/Eastern timeline running through the state. Significant yield loss has been associated with SWCB when farmers have been in late harvest situation.

In 1999 and 2000, a planting date study was conducted at the UKREC in Princeton, KY to study the value of Bt corn when planted at different times. In each year, 5 different planting dates were used for a commercial Bt corn hybrid and its commercial non-Bt isolate. At harvest the stalk injury by ECB and SWCB was measured through stalk splitting.

Have a Plan: Select a blue mold management plan BEFORE you transplant that involves both Cultural Practices and Fungicides! Focus on making the environment less favorable for the pathogen to survive and infect your tobacco, making the plant more tolerant, and preventive use of fungicides rather than rescue.

Transplants: Use blue mold-free transplants. Keep the pathogen out of your community for as long as possible. The surest way to have great losses from blue mold on your farm and in your community is to set blue mold infested transplants.

Field Selection: avoid shady, wet-natured locations with poor air drainage, for example: sites near streams. Realize that if such sites must be used, more attention should be given to most of the other points listed here.

Variety Selection: Appreciate that varieties differ in their tolerance to blue mold. Consider a variety with tolerance to blue mold when planting on highly conducive sites. Be aware that current varieties with reported resistance to blue mold have low resistance to other diseases and low yield potential, so factors other than blue mold resistance should be considered in the decision.

Row and Plant Spacing: avoid high plant populations by using wider rows and wider plant spacing. From a blue mold control standpoint, wider row spacing is more important than wider hill spacing, once the plants are at least 18" apart in the row.

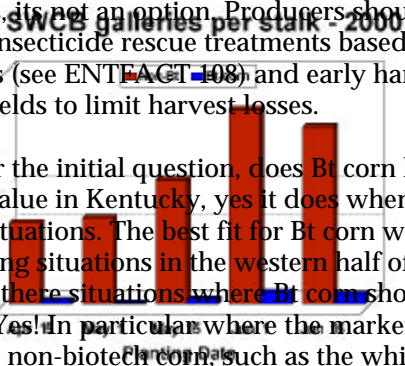
Fertilization: avoid excess N-fertilization and follow recommended fertilization schedules based on current soil tests that also consider cropping history.

Fungicide Spray Program: Pay particular attention to protecting tobacco plants when they are most vulnerable. Blue mold is especially aggressive on young tissues, but there is young tissue on the plant until after topping. The greater the percentage of the tissue being young, the greater the risk. Therefore, use regular protectant fungicide sprays of Acrobat MZ, as per the label, until plants are 18" tall (from bud to ground), and then activate the induced-resistance mechanism with two applications of Actigard 50W, as per the label, 10 days apart. This combination should provide a high level of blue mold control until about 14 days after the second Actigard treatment, which will be topping time for early varieties. On medium to late varieties, additional foliar fungicide sprays with Acrobat MZ will be required some season.

Topping and Sucker Control: early topping and

This study illustrated with the stalk injury data, that the risk exposure to SWCB and ECB increased with planting dates after May 1. Southwestern corn borer may be a significant yield consideration with corn planted after May 10. With corn planted in June, the risk of injury to SWCB is high. Bt corn should be a consideration when farmers find themselves in a late planting situation. But Bt corn is not the only management option. In fact with white corn producers, it's not an option. Producers should also consider insecticide rescue treatments based on IPM guidelines (see ENTEACT 108) and early harvest of infested fields to limit harvest losses.

To answer the initial question, does Bt corn have on-farm value in Kentucky, yes it does when used in some situations. The best fit for Bt corn will be in late planting situations in the western half of the state. Are there situations where Bt corn should not be used? Yes! In particular where the market is calling for non-biotech corn, such as the white corn market. In addition, with early and normal planting dates, the value of Bt corn is reduced and in some situation may be less than the added cost for the seed.



TOBACCO

CULTURAL PRACTICES ARE IMPORTANT TOOLS IN A BLUE MOLD CONTROL PLAN by William Nesmith

We often focus on fungicides in the management of blue mold, but cultural practices are also very important. They help delay the onset of blue mold, slow its progress, and increase the tolerance of plants. We urge growers to use more than one control method in fighting blue mold. The following are some guidelines to aid in the development of a blue mold control plan.

improved sucker control slow disease progress!

Harvest: Manage the crop to get to harvest quickly, but not prematurely. Don't cut fields early to avoid blue mold losses. Remember that in healthy crops, you gain 200 lb/acre/week after topping, but in some instances, it may be advisable to destroy or early-harvest part or all of a field with blue mold to reduce the threat to nearby tobacco!

Post-harvest field management: Blue mold builds up rapidly on sucker regrowth after harvest, so prevent sucker regrowth. Reduce the disease potential to later crops, by disking deeply to kill the root systems, then seed the cover crop.

Kentucky Blue Mold Warning System: Maintain contact with the Kentucky Blue Mold Warning System to be informed about the status of blue mold.

WHEAT

HENBIT AND PURPLE DEADNETTLE

By James R. Martin

Henbit and (*Lamium amplexicaule*) purple deadnettle (*Lamium purpureum*) are the purple flowered cool-season broadleaf weeds that commonly occur in fields this time of season. Their square stems and opposite leaves are common characteristics of plants in the mint family. Henbit often begins blooming in February, while purple deadnettle may not bloom until later. Henbit's upper leaves have no petioles, while its lower leaves are on petioles. Purple deadnettle's leaves have petioles and tend to be reflexed or pointed down.

Both species often coexist; however, purple deadnettle appears to occur more frequently than henbit. Purple deadnettle may be a little more winter hardy than henbit. Slight differences in susceptibility to herbicides may also explain why deadnettle is the more dominant of the two species. Early ratings of some of this year's herbicide studies indicate about 5 to 10 percent better control of henbit compared with that of purple deadnettle. This trend seemed to occur with many herbicides including Gramoxone Extra, Roundup UltraMAX, Touchdown IQ, and Harmony Extra.

SHADE TREES AND ORNAMENTALS

EASTERN TENT CATERPILLAR EGGS HATCHING

By Lee Townsend

Eastern tent caterpillars overwinter as eggs in masses of 150 to 400 on twigs of wild cherry, apple,

and crabapple but may be found on hawthorn, maple, cherry, peach, pear, and plum, as well. These masses are covered with a shiny, black varnish-like material and encircle branches that are about pencil-size or smaller in diameter. Eggs hatch about the time buds begin to open.

Caterpillars from one egg mass stay together and spin a silken tent in a crotch of a tree. They may be joined by caterpillars from other masses to form a large colony. During the heat of the day or rainy weather, the caterpillars remain within the tent. They emerge to feed on leaves in the early morning, evening, or at night when it is not too cold.

Defoliation of trees, building of unsightly silken nests, and later, wandering caterpillars crawling over plants, walkways, and roads cause this insect to be a nuisance in the late spring and early summer.

While tent caterpillars can nearly defoliate a tree when numerous, the tree will usually recover and put out a new flush of leaves. In the landscape, however, nests can become an eyesore, particularly when exposed by excessive defoliation.

Larvae cause considerable concern when they begin to wander to protected places to pupate. They are frequently seen crawling on other types of plants, walkways, and storage buildings. They are a nuisance and can create a mess when they are squashed on driveways, sidewalks, and patios. But keep in mind that no additional feeding or damage is done by the wandering caterpillars.

Young caterpillars feeding on leaves can be killed by applying an insecticide containing *Bacillus thuringiensis* var *kurstaki*. Other insecticides include carbaryl, methoxychlor, and malathion. Larvae within the tents are protected beneath the webbing and are more difficult to kill with an insecticide. Insecticides are generally ineffective against mature wandering larvae.

FRUIT CROPS

CAN KENTUCKY APPLE GROWERS AVOID A MAJOR FIRE BLIGHT EPIDEMIC?

By John Hartman

Fire blight review. Kentucky apple growers are familiar with fire blight disease. This highly contagious and deadly disease attacks blossoms, leaves, shoots, branches, fruits, and roots. The disease usually first enters the tree in spring through flowers during bloom (primary infection). Primary infection occurs when bacterial populations on the surface of the tree build up during warm

spring weather and when rain showers wash the bacteria on the flowers into the nectary at the base of the flower. Following primary infection, fire blight becomes established in the tree and quickly invades through the current season's growth into older growth. Death of infected branches is so rapid that the leaves do not have time to fall off the tree. Young non-bearing and newly bearing trees can easily be killed by the infection while mature bearing trees may survive even if much of the new growth is killed. Heavy rainstorms, especially those with hail in spring and early summer, can spread blight, sometimes creating injuries for fire blight entry into the tree and cause what is known as "trauma" blight.

Managing fire blight. If growers are still pruning their orchard, be sure that all of last year's fire blight strikes are pruned out and the cut branches removed from the orchard. Fixed copper sprays for suppressing buildup of bacterial populations in the trees should already have been applied to apple orchards. During bloom, antibiotic sprays are applied to control fire blight. Some Kentucky growers use a computer program called Maryblyt to track disease development and to time antibiotic applications. This computer program appears to work well under most Kentucky orchard conditions. The advantage of using Maryblyt is that growers can determine when primary infections are occurring or likely to occur.

Kentucky apple crops are now only a few weeks away from full bloom, the time for primary infections of fire blight. Growers who plan to use Maryblyt for fire blight management will want to begin collecting data to enter into the computer program now. The computer program only works if maximum/minimum temperatures, rainfall, and tree growth stage are known. Although the data can simply be written down at first, at least by pink, it is essential that all the data from green tip onwards be entered into the computer. Streptomycin, the most commonly used antibiotic for fire blight control, works well if used immediately before infection or within about 12 hours (24 hours maximum) after an infection.

Fire blight can still cause disaster. Last year, apple growers in southwest Michigan suffered tens of millions of dollars in losses due to fire blight. A combination of factors led to the fire blight disaster including:

- ! ideal weather for infection during bloom,
- ! several days of widespread hail and thunderstorms,
- ! appearance of new streptomycin-resistant fire blight strains (made even more lethal by application of streptomycin which suppressed competing bacteria),
- ! widespread use of highly susceptible apple

rootstocks and cultivars such as Braeburn, Fuji, Gala, Idared, Jonathan, and Jonagold,
! new high-density plantings,
! and nearby abandoned orchards left by economically strapped growers .

Blight severity in these Michigan counties was such that most apple growers who planted new trees in the last five years will lose those trees. There is also concern about the health of the older orchards. All apple growers will lose a portion of their crop for the next several years due to this fire blight epidemic.

Can we reduce the threat of fire blight in Kentucky?

In Southwestern Michigan it took an unusual combination of events to all come together for this most devastating epidemic to occur. Nevertheless, Kentucky growers can learn from this disaster and take actions now that will reduce fire blight.

! In some orchards, fire blight develops when the grower mistakenly thinks that there was none there the previous season. Re-examine the orchard and cut out any and all fire blight cankers and destroy the prunings.

! Until new compounds come along in the distant future, streptomycin is about the only chemical tool available for managing the disease. We have not verified the presence of streptomycin resistance in Kentucky yet. To avoid development of bacteria with resistance, use streptomycin only when it will be effective - during bloom, and then use it no more than 3-4 times a year. Where streptomycin resistance occurs, it is linked to heavy (more than 4 times per season) use of the chemical. Another antibiotic, oxytetracycline, may be used, but it must be applied before infection to be effective.

! When putting out a new orchard, be aware that most of the popular new varieties are very susceptible to fire blight. Try to select tolerant varieties. Improving current blight susceptible varieties through genetic engineering shows promise for the future, but the public's negative view of genetically altered crops may prevent use of this new technology. The new blight-resistant rootstocks will help growers most years, but only resistant varieties combined with resistant rootstocks will allow growers to avoid losses in highly blight-favorable years.

! Be aware of the disease risks when using high-density plantings.

! Where use of the tree growth regulator, Apogee, fits into orchard management, it will help reduce fire blight, but it will not substitute other management tools.

LAWN AND TURF

NECROTIC RING SPOT

Paul Vincelli

Symptoms of what appears to be very early cases of necrotic ring spot have been seen in Kentucky bluegrass swards in central Kentucky, and may be occurring elsewhere. Annual bluegrass and fine fescues are also reported to be frequently attacked. The disease appears as circular to irregular patches of dead turf up to 1-1.5 feet in size, sometimes with green tufts of grass or weeds in the center. Be sure not to confuse the disease with “dog patch” (injury from dog urine). “Dog patch” typically is surrounded by a zone of darker green grass; it never has the green tuft of healthy grass in the middle; and the dead grass often has a light yellow color instead of the tan color typical of necrotic ring spot. The disease occurs over a wide range of soil pH (5.0-8.0), which is different from similar turf diseases like summer patch. Necrotic ring spot is generally more severe in swards under stress (low mowing height, moisture extremes).

Management suggestions include controlling thatch buildup and avoiding high nitrogen fertility, particularly in spring and summer. Once an outbreak has occurred, frequent irrigation to prevent drought stress is important to promote recovery. Controlling patch diseases with fungicides may not always provide satisfactory results. Best results with fungicides are obtained if the turf is treated preventively to protect the roots from infection. A good guideline is to treat 4-6 weeks in advance of when symptoms usually occur. Lightly water in the application prior to drying on leaves. Best results have been obtained with Rubigan and Eagle, although Chipco 26GT, Banner MAXX, and Cleary’s 3336 will also provide some control. Overseed affected areas with perennial ryegrass or renovate with resistant varieties of Kentucky bluegrass or with tall fescue. Applications of products containing chlorothalonil may enhance disease pressure.

HOUSEHOLD

TERMITES: STRAIGHT ANSWERS TO TOUGH QUESTIONS

By Mike Potter

Termite season has begun in Kentucky. During the next several weeks, you’ll probably spend more time responding to termite calls than to any other household pest problem. To complicate matters, the public has very little understanding of termites, and what should be done if their home is infested. This column will help you answer their questions.

Q: Why be concerned about termites?

A: Termites cause billions of dollars in damage each

year. They primarily feed on wood, but may also damage paper, books, foam board insulation, and even swimming pool liners and filtration systems. Termites may injure living trees and shrubs, but usually are a secondary invader of woody plants already in a state of decline. While a structure may become infested at any time, presence of termites is of particular importance when buying or selling a home since a termite inspection/infestation report is normally a condition of sale. Besides the monetary impact, thousands of winged termites emerging inside one’s home is an emotionally trying experience — in a recent attitudinal survey, 93 percent of Kentuckians indicated concern about the possibility of finding termites in their home.

Q: Why are there so many termite calls during March - May?

A: Spring is typically when large numbers of winged termites emerge, known as “swarmers.” In nature, termites swarm in order to disperse and start new colonies. Triggered by warmer temperatures and rainfall, the winged termites emerge from the colony and fly into the air. The swarmers then drop to the ground, shed their wings, pair off with a mate, and attempt to begin a new colony in the soil. Very few swarmers emerging outdoors survive to start new colonies. Termite swarmers emerging indoors are incapable of eating wood, seldom survive, and are best removed with a vacuum cleaner. They do indicate that an infestation is present.

Q: How will I know if my home is infested?

A: The presence of winged termites inside a home almost always indicates an infestation warranting treatment. Termites can be differentiated from winged ants by their straight antennae, uniform waist and wings of equal size. (Ants have elbowed antennae, constricted waists and forewings that are longer than the hind wings.) Swarmers emerging from tree stumps, woodpiles, and other outdoor locations are not necessarily cause for concern, and do not necessarily mean that the house, itself, is infested.

Another indication of a termite problem is pencil-wide mud foraging tubes extending over foundation walls, support piers, sill plates, etc. Termites construct these mud “shelter” tubes as they travel between their underground colonies and the structure. Termite-damaged wood is usually hollowed out along the grain, *with bits of dried mud or soil lining the feeding galleries*. Wood damaged by moisture or other types of insects (e.g., carpenter ants) will not have this appearance.

Oftentimes there will be no sign of the termites

themselves – small, creamy-white insects with an ant-like appearance. An infestation can go undetected for years, hidden behind drywall, paneling, floor coverings, insulation, and other obstructions. Termite feeding and the resultant damage can even progress undetected in wood that is exposed, because the outer surface is usually left intact. Confirmation of infestation often requires the keen eye of an experienced termite inspector. However, even the most experienced inspector can overlook damage which is hidden.

Q: Can I treat the house myself?

A: Ridding a home of termites requires special skills. A knowledge of building construction is needed to identify the critical areas where termites are likely to enter. Many of these potential points of entry are hidden and difficult to access. Termite control also utilizes specialized equipment such as masonry drills, pumps, large-capacity tanks, and soil treatment rods. A typical treatment may involve hundreds of gallons of a liquid pesticide, known as a *termiticide*, injected into the ground alongside the foundation, beneath concrete slabs, and within foundation walls. In short, termite treatment is usually a job for professionals. A possible exception would be if a mailbox post, sandbox or other small wooden object not attached to the house was infested. “Do-it-yourself” termite baits (see below) sold at retail stores will seldom eradicate an existing termite problem.

Q: How do I choose a pest control company? Why is there such a difference in price?

A: These are complex questions. The company should be licensed by the Kentucky Department of Agriculture. Membership in the Kentucky Pest Control Association and/or National Pest Management Association suggest the company is an established firm with access to technical and training information needed to do the job correctly. As with any service company, references are invaluable. Consider calling at least 2-3 companies. Requesting inspections and estimates from more than one company will substantiate the extent of your termite problem and allow you to compare services. Companies offer different types of warranties or service agreements. Most offer retreatment of localized areas if the termites return. In some cases, no warranty/service agreement may be offered if construction elements such as wells, cisterns, subslab heating ducts, drainage systems, or inaccessible crawl spaces make it impossible to treat in accordance with industry standards.

Take your time when selecting a company. Termites damage wood slowly; the amount of damage caused by taking an additional day, week, or month

to make an informed decision is insignificant. Avoid firms that try to pressure you into signing a contract immediately with “specials” or scare tactics. Ultimately, the quality of a termite job depends less on the person who sells the job than on the individual who does the work. A safe and effective treatment requires an experienced technician, not someone who was hired a few weeks ago.

Q: Which treatment methods and products are most effective?

A: Another complex and difficult question. There are two general categories of termite treatment, liquids and baits. Liquid termiticide applications have been around for decades. Their purpose is to provide an effective, long-lasting chemical barrier around and beneath a structure which termites cannot breach. Most of the products used in recent years have been *repellent* rather than lethal to termites foraging in the soil. Two newer materials, Premise® (imidacloprid) and Termidor® (fipronil), are *non-repellent*. Consequently, termites freely tunnel into the treatment zone and are killed. For reasons too complex to explain in this article, it appears the non-repellent materials, Premise and Termidor, are proving a bit more reliable in terms of their ability to resolve the termite problem in the first attempt.

The other broad treatment category is baits. Termite baits consist of paper, cardboard, or other “termite-friendly” food, combined with a slow-acting substance lethal to termites. Some bait materials are installed below ground out in the yard, whereas others are placed inside the structure in the vicinity of active termite tubes. Foraging termites consume the bait and share it with their nest mates, resulting in a gradual decline in termite numbers. On some properties, baits may constitute the only form of treatment; on others, they may be supplemented with either a partial or complete liquid application to the soil.

Termite baiting is a very complex subject. A detailed discussion of the considerations in having your home treated with baits versus liquids is provided in entomology extension publications, *ENT-65: Termite Baits: A Guide for Homeowners*, and *Entfact-644: Consumer Update: Termite Baits*. Regardless of which product or approach is selected, it’s important to have an experienced technician, backed by a responsible pest control firm.

Q: Does the entire house need to be treated... or can they just "spot treat" areas where I see termites?

A: Subterranean termite colonies may contain

hundreds of thousands of individuals foraging in many different directions. For the pest control company, localized or “spot” treatments are generally a gamble, except in cases of retreatment. Most reputable pest control firms will not warranty spot treatments, since it is likely that termites will eventually find other points of entry into the structure.

provided the service agreement is purchased and maintained.

Q: How long will a treatment last?

A: All registered liquid termiticides are supposed to control termites for at least five years when applied according to label directions. The *actual* length of control on a given structure will depend on such factors as thoroughness of the application, prevailing environmental conditions, and density of termites in the area. If termites swarm again and continue to be a problem the year after treatment, it’s usually not from degradation of the termiticide – but because termites have found an untreated gap in the chemical barrier.

Q: Will the termite chemical harm my family or pets?

A: Termiticides are tested extensively for adverse effects on health. Before a product can be used, numerous studies are conducted by the manufacturer and independently evaluated by the U.S. Environmental Protection Agency. Based on the current body of knowledge, these registered termiticides present no significant hazard to humans, pets or the environment when applied according to label directions. Despite the negligible health risk from a properly performed termite treatment, people with lingering concerns should consult their physician. Clients who are still apprehensive may want to consider having their home treated with baits.

Q: Have I been "cheated" if termites continue to infest my house after treatment?

A: Not necessarily. Unlike other services such as plumbing or electrical work, termite control involves living creatures. The best treatments performed by knowledgeable firms may fail at times, because termites are able to find their way through tiny, untreated gaps in the soil. While the *intent* is to establish a continuous, impenetrable chemical barrier in the soil, this is all but impossible to achieve in actual practice. In the case of baits, it may take several months for termites to initially find the installations in the soil, and several months more to achieve control.

The key in termite control is to hire a reputable pest control firm employing experienced, conscientious technicians. Companies will usually return and retreat affected area(s) at no additional charge

PESTS OF HUMANS

TICKS ACTIVE NOW

By Lee Townsend

Ticks are active now and it will become increasingly easier to pick them up while working in or walking through or near overgrown areas. Ticks wait on vegetation and are picked up by humans and passing animals.

Here are some tips to reduce encounters with these bloodsucking arthropods.

! Wear light colored long sleeved shirts and long pants. Be sure to tuck pant legs into boots or socks. The light color will make ticks easier to spot and the tucked pant legs will keep them from reaching the skin easily.

! Stay to the center of hiking paths, and avoid grassy and marshy woodland areas.

! Check yourself frequently for ticks and 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.

! When used properly, chemical repellents can provide protection against ticks. However, repellents can be potentially harmful when certain precautions are not taken. See the label for specific instructions - general precautions for any repellent include

! Apply only to exposed skin or clothing

! Never use repellents over cuts, wounds, or irritated skin

! Do not apply to eyes, or mouth and with young children do not apply to their hands

! Heavy application is not necessary

! 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 directly on 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

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

DIAGNOSTIC LAB HIGHLIGHTS

by Julie Beale and Paul Bachi

We have seen only a few samples of agronomic crops over the past week, including wheat with symptoms of stress/cold injury, and tobacco seedlings (over-head irrigated) with both Pythium root rot and Rhizoctonia damping-off. In addition to woody ornamentals showing winter injury and drying (boxwood, holly, magnolia, euonymus), we have seen samples of greenhouse ornamentals with Botrytis blight (Kalanchoe); powdery mildew (rose) and Pythium root rot (begonia, impatiens).



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.