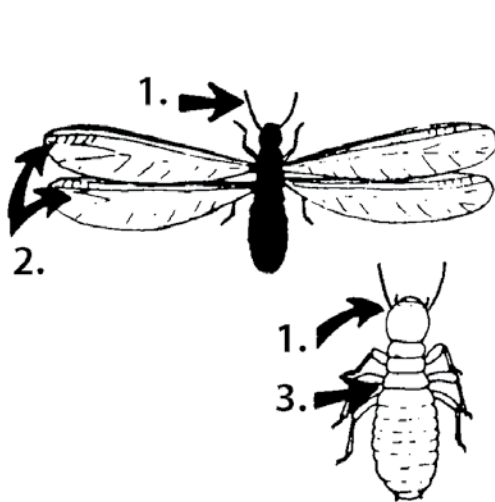




Termites



Compare these features to tell reproductive termites from ants

Termites

1. Antennae not elbowed
2. Two pair wings of equal length
3. Waist thick

Ants

1. Antennae elbowed
2. Two pair wings of unequal length
3. Waist thin

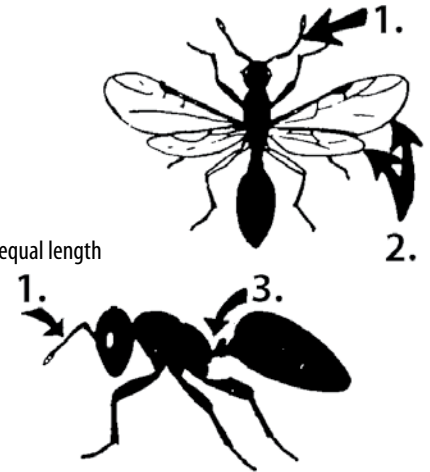


Figure 1

The thought of termites causes some homeowners to panic. While it is true these insects can become quite destructive, the structural damage caused by termites occurs slowly. A mature colony eats only one fifth of an ounce of wood a day. If you find evidence of termites, take time to evaluate the problem and select proper treatment. In most cases, once a termite infestation is established, control is a job for the professional pest control operator. The average homeowner seldom has the training, experience, or equipment for proper treatment.

Identification

The eastern subterranean termite is the most common and troublesome in Kansas. This species requires warm air and moisture for survival and meets these conditions by maintaining contact with the soil. Termites use soil and/or fecal material and saliva to construct mud tubes and tunnels.

Winged termites are commonly mistaken for winged ants. It is easy to distinguish between the two (Figure 1). Winged termites or “swarmers” have straight antennae, thick “waists,” and four long, fragile wings of equal size. Winged ants have elbowed (bent) antennae, narrow waists and two forewings that are larger than the two rear wings.



Figure 2 - Worker

Termites have a caste system where individuals with different duties in the colony have a different appearance. Subterranean termites have at least three different castes.

Workers are creamy-white, soft-bodied, wingless, eyeless insects and are most numerous in the colony (Figure 2). They do all of the “work” such as getting food, feeding soldiers and reproductives, building tunnels, etc. Workers feed on the soft grain of the wood, which may result in structural damage.



Figure 3 - Soldier

Soldiers have large, elongate, brown heads that are equipped with two large jaws. Except for the head, the soldier is soft-bodied like the worker (Figure 3).

Soldiers defend the colony against predators, such as ants.

Winged reproductives or “swarmers” have dark-colored, flattened bodies, large eyes, and two pairs of long, narrow wings of equal length (Figure 4).

These fragile wings break off, usually after a short, fluttery flight, leaving the transparent wings or their remnants behind. As a result, swarms of winged termites may have a number of individuals that no longer have wings. Swarmers are most often discovered by homeowners during early spring (infrequently late fall) in Kansas. Swarming is usually initiated by the first warm spring rains.



Figure 4 - Reproductives

Detection

The following are signs a structure may have a termite infestation:

- Swarmers emerge and crawl or fly around the area in large numbers.
- If swarmers emerge inside, they will be attracted to light. Broken wings may be found near windows or doors.

- Presence of mud shelter tubes connecting the soil with a wooden structure. The tubes are found in crawl spaces, in concrete floor cracks, inside or outside foundations, around holes where pipe and ducts go through the slab, etc. Mud tubes are usually full of workers (Figure 5).



Figure 5 – Termites and Termite Tubes

- Presence of mud-filled joints in wood framing, paneling and trim in finished parts of the structure (Figure 6).



Figure 5 – Mud-filled joints in wood

- Damaged wood often goes undetected. Probe wood near the foundation with an ice pick, screwdriver, or similar tool. Should the wood break or be soft and easily punctured, check the galleries which may contain soil and termite excrement. Termites are not always present in the galleries. It is *not possible* to determine how long such galleries have existed.

Control measures

Proper building construction and maintenance. The best safeguard against termites is proper building construction. During the construction of a home or building, never permit boards or scraps of wood to become buried in the backfill next to the foundation or under slab floors, porches, steps, and terraces. The wood serves as food for termites, and they may later move up and into the structure. Form boards, grade stakes, and spreader sticks should also be removed before backfilling around the foundation.

Metal termite shields on the foundation seldom provide 100 percent protection because they are often installed incorrectly. Also, termites may eventually build their mud tubes across or around them.

- For all structures, exterior woodwork should be a minimum of 6 to 8 inches above grade. Beams in the crawl space under homes should be at least 18 inches above ground to permit ease of inspection.

- Lumber near the soil, such as poles, posts, etc., should be treated with a wood preservative. Commercially pressure-treated wood will last for many years.
- Make sure there is no wood in contact with the soil next to the structure. This includes wood fencing, piles of firewood, trellises, wood porches, wood steps and flower boxes.
- Provide ventilation openings in foundations at the rate of 2 square feet to 25 running feet of outside foundation wall to keep the ground dry. Shrubbery should be planted far enough from the vents to permit air circulation. Make sure downspouts carry water away from the building.

Barrier treatments. All houses, or buildings built on concrete slabs are especially susceptible to termite attack through expansion joints, cracks, openings around plumbing, etc. The concrete foundation should be reinforced to prevent cracking. Termites can pass through a crack as small as $\frac{1}{32}$ of an inch. Chemical pretreatment of the soil is recommended before concrete is poured.

- Houses built on foundation walls or piers also should be pretreated. Treatment of the foundation footings both along the inside and outside of the structure, and along the outside walls at the time of backfilling is necessary.
- Voids in concrete block foundations should be flooded with dilute termiticide.
- When applying termiticides, follow label directions and precautions.

Active Infestations

The presence of swarmers may indicate that there is an existing termite problem in or around a home, but the swarmers themselves are not damaging and are not likely to be successful at starting a new colony inside a home. Unless the winged females find moist soil, they will die within a short time. These insects can be removed from the home by vacuuming them and placing the vacuum bag in an outdoor trash can. If termite swarmers are found, the home should be inspected for other signs of termites.

In most instances, termite control measures are best accomplished by a professional pest control operator.

Baiting and Monitoring

A baiting system for termite control entered the Kansas marketplace in 1995. Today, there are two main systems. In the first type, a pest control technician places monitoring station(s) around the perimeter of the house (or other structure). When foraging termites attack the station(s), the monitoring device is replaced with a tube containing an insect growth regulator (IGR). The IGR cannot be detected by the foraging termites, which allows them to pass it throughout the colony to other workers, soldiers, and the queen. The IGR stops the growth of termites as they age, controlling the whole colony.

The second baiting system is similar to the first, but it uses a slow-acting stomach poison as the active ingredient. A

termite control firm can explain these two systems in detail.

Termite baiting uses small amounts of chemical and may be the desired method of control where special concerns such as water wells, cisterns, structural limitations, or other considerations may limit the application of the traditional barrier treatment. Consult pest control firms for more information on termite bait systems. With either system, the active structural infestation should be controlled by a conventional chemical treatment.

Selecting Termite Control Services

Don't panic. There is no need to become frightened if you learn that termites have infested your home. These insects work slowly and your house will not be ruined or collapse overnight. Never permit yourself to be rushed into purchasing termite control services. Any additional damage done in a few weeks or even a few months will make little difference. There is always time to purchase termite control wisely and at your convenience.

Purchase services from a reliable firm. Arrange for termite control service with the same care and discrimination that you would use in the purchase of any other service for your property. Always be sure that you are dealing with a reliable firm. There are several ways to investigate before you invest.

Kansas has a pesticide use and applicator law under which all commercial pest control firms must operate. Check with the Pesticide Certification and Records Center, Kansas Department of Agriculture, 109 SW Ninth Street., Topeka, KS 66612; 785-296-2263, <http://www.ksda.gov> to see if firms are authorized to do business in the state.

A reliable firm should be able to provide references of prior work. Obtain references and take the time to check them. Check to see if the firm is a member of a local, state, or national pest control association. Membership in such associations offers assurance that the firm has met certain prerequisites and has an established place of business.

Your county agriculture agent may be able to advise you on purchasing termite control. You may also check locally with the Chamber of Commerce or Better Business Bureau.

File an "Open Records Request" asking for a 'Compliance History' for the company of interest. The request form can be found at http://www.ksda.gov/open_records/id/1. There are fees for obtaining this type of request.

If the firm is from out of town, it is even more important to make sure it is reliable. Check to see that it has an established place of business in the town where it is said to be located. Most fraudulent operators work in communities where they are not known. Ask for references and take time to check them carefully. Reliable firms will welcome investigation.

Question firms that:

- Play up fear that your house may soon collapse.
- Quote a price based solely on the number of gallons of chemical used.
- Profess to have a secret formula or ingredient for termite control.
- Have no listed phone number.
- Show up unexpectedly and use evidence of termites in trees, etc., as an excuse to inspect the house.
- Also want to trim trees and do general repair work as part of the deal.
- Cater solely to elderly or infirm people who are living alone.
- Offer a discount for leads on other termite jobs.

Know the terms of the contract. Ask your termite control specialist for a written statement of the work proposed and an estimate of cost, as required by law. Read the proposal carefully. A reliable firm will take the time to answer questions. If possible, get competitive estimates from three reliable firms. They will give you time to consider the estimate.

It is customary to guarantee termite control work, either on a year-to-year basis, or for a three- or five-year period. Make sure you know exactly what guarantee is offered by the firm. Guarantees vaguely referring to termite control are unacceptable. Determine if a yearly charge will be levied during the guarantee period or whether these charges are included in the initial price of the job.

Remember that a guarantee is no better than the person or firm that gives it to you. A guarantee is not evidence that a firm is reliable.

Kansas law. Section *K.S.A.2-2455* of the Kansas Pesticide Law says before payment is received each pesticide business shall give to each customer for whom termite services are performed a written statement of services or contract giving the following information:

- Business name and address.
- Name and address of the customer.
- Pest or pests to be controlled, which may be stated in general terms.
- Pesticide to be used including the kind and quantity.
- Date and location of the application of the pesticide.
- Expiration date of all guarantees, if any is given.
- Signature of the authorized officer or representative of the business who prepared the statement of services.
- Wind direction and velocity, when applicable.
- Conditions under which retreatments, if any, are to be made.

- Approximate date or dates of inspections made after the original application of the pesticide.
- Diagram of the structure to be treated, showing the location of visual evidence of active and inactive infestation, and where treatments are to be made.

If you have questions about the pesticide law or the services provided by pest control firms, contact the Pesticide and Fertilizer Program, Kansas Department of Agriculture, 109 SW Ninth Street., Topeka, KS 66612; 785-296-3786, <http://www.ksda.gov>.

Most firms are reliable. Remember, most pest control firms are reliable and legitimate business organizations that are respected in their communities.

Do-It-Yourself

Proper treatment usually requires specialized application equipment and proper licenses from the Kansas Department of Agriculture to use termiticides that are classi-

fied as Restricted Use — for example, concrete drills and pressure-rodging equipment, which is not available to most homeowners. Also, the label requires large quantities (often several hundred gallons) of the dilute chemical material to properly treat an entire home, and these large quantities are extremely difficult to handle in a do-it-yourself application. There are, however, some over-the-counter products for homeowner termite control. Before purchasing one of these products, read the label directions to be sure you have the equipment and the ability to make the application according to label directions. Improper application may contaminate the environment and/or your home, waste your money and time, and fail to control the termite infestation.

Photo Credits

Figures 2, 3, and 4 – Holly Davis, Kansas State University

Figures 5 and 6 – Don Cress, Kansas State University

R. Jeff Whitworth

Extension Specialist — Entomology, KSU

Phil Sloderbeck

Entomologist, Southwest Research and Extension Center, Garden City Kansas

Holly Davis

Insect Diagnostician and Research Assistant — Entomology, KSU

Sharon Dobesh

IPM Coordinator – Entomology, KSU

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

Publications from Kansas State University are available on the World Wide Web at: www.oznet.ksu.edu

Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, credit R. Jeff Whitworth, Phil Sloderbeck, Holly Davis, and Sharon Dobesh *Termites*, Kansas State University, January 2009.