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Department of Entomology, Soils, and Plant Sciences ● 114 Long Hall ● Clemson, SC 29634-0315 ● Phone: 864-656-3111
email:dpento@clemson.edu

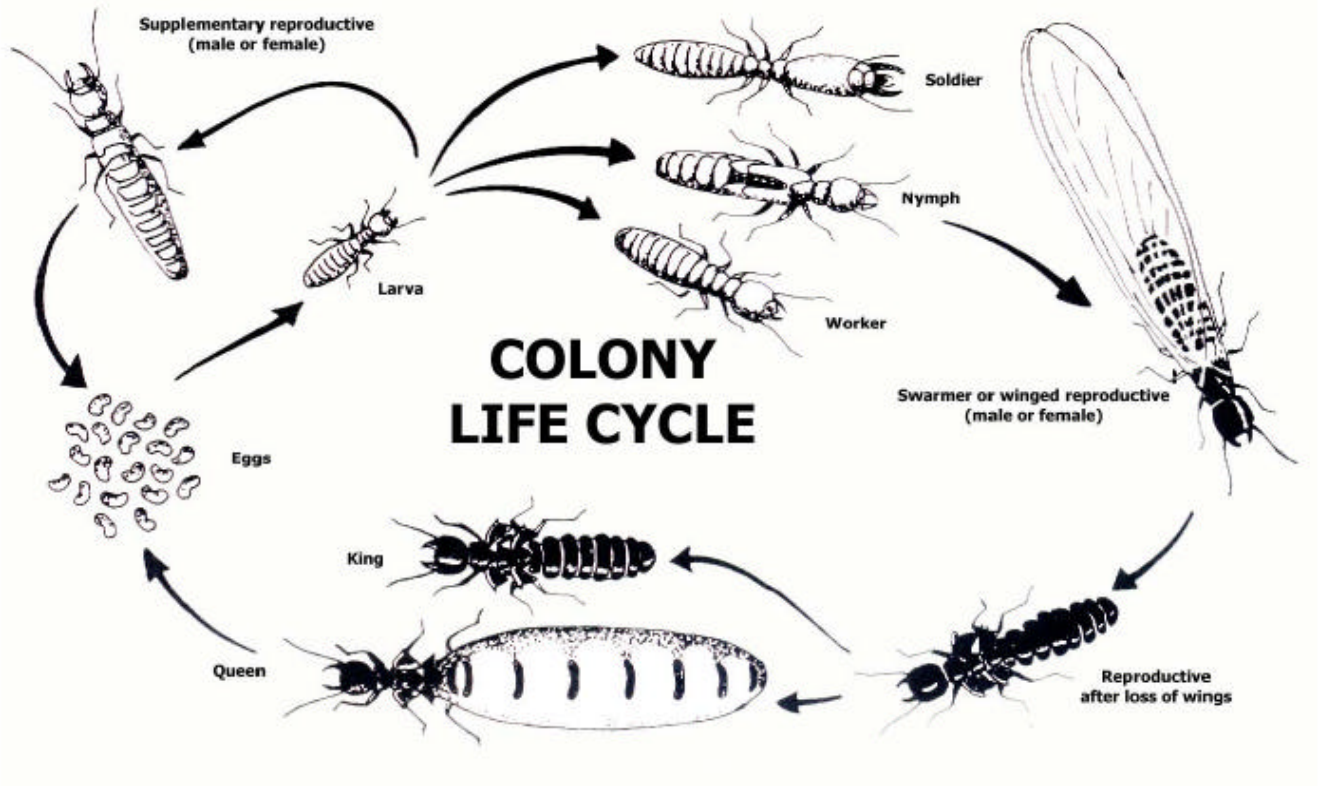
SUBTERRANEAN TERMITE CONTROL

Subterranean termites, in natural settings, work as beneficial insects by breaking down cellulose-containing materials, such as dead trees. They live in the soil and must maintain contact with the ground or some other moisture source to survive. Termites become a problem to humans when structures containing cellulose are built over or near their colonies in the ground. They are able to find weakened areas in the structure, or areas of direct wood to ground contact, and feed on the cellulose.

Termites build earthen shelter tubes from the ground into the structure for protection from predators and to help maintain a moist environment. Many times these tubes are built on inside walls, porches, or chimneys where they cannot be seen.

In some rare situations, if water and wood are available from a source other than the soil, subterranean termites can establish a colony with no ground contact. Isolated, above-ground infestations may occur in buildings where termites have access to water from condensation, leaking pipes, roofs, or other sources.

Termite Colony. Termites are social insects that live in highly organized colonies. Like many insects,

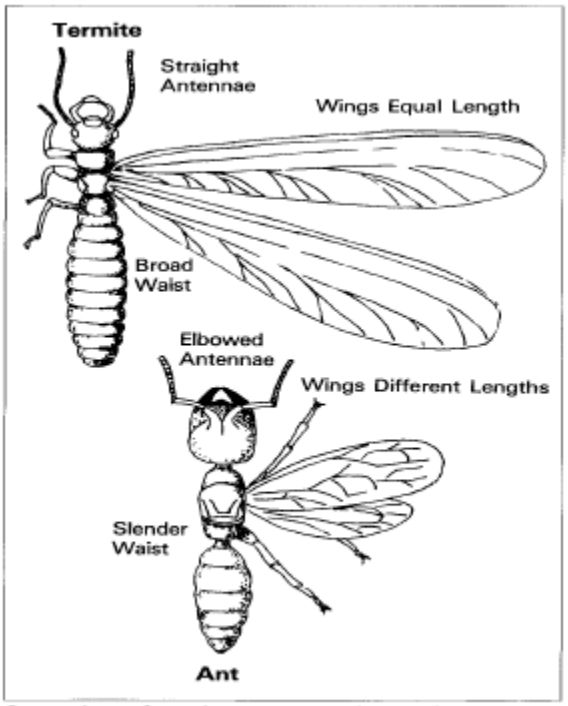


termites have an egg, an immature and an adult stage. There are three main types of adult colony members, or castes: reproductives, workers and soldiers. The reproductives include the king and queen, and in large colonies, supplementary reproductives that produce eggs. Workers are usually the most numerous individuals in the colony. They are small, wingless and whitish and may be found in damaged wood. Workers care for all of the other termites and forage for food (wood).The soldiers protect the colony from attackers such as ants. Soldiers fit the same description as workers, but have long, dark mouth parts protruding from their large heads. Soldiers may also be found in damaged wood. Termites are able to digest wood with the help of microorganisms which live in the termite gut.

When a colony is several years old and relatively large, it may produce another form of adult termite called a "swarmer." Swarmers have four wings, are often brown or black and range in size from approximately $^{3}/_{8}$ to $^{1}/_{4}$ inch. Swarmers are the termite's way of sending out new kings and queens to start colonies. In the spring, great numbers of swarmers can fly from a single colony. Male and female swarmers pair up, shed their wings, and tunnel into the ground. The pair then prepares a chamber near a wood source where the female will begin to lay eggs. These eggs are cared for by the king and queen and will develop into worker termites. The workers take over care of the young from the queen and king. Once enough workers are established, soldiers and other castes will develop from eggs produced by the queen. Two or three years after the establishment of the colony, secondary reproductives are produced. These greatly increase the egg-laying activity and population of the colony. Normally at least three to four years or more will pass before any swarming of winged termites from the colony occurs.

Swarmers are the most visible form of termite. These termites can be confused with many ants that also swarm in the spring. However, swarming ants have elbowed antennae, a narrow waist and front wings that are longer than the back wings. Swarming termites have straight antennae, a thick waist and all wings the same length.

Types of Termites. In South Carolina , there are two major types of subterranean termites: several species of the native subterranean termites and the imported Formosan subterranean termite. Native subterranean termites are common throughout South Carolina. Formosan subterranean termites are known to occur mainly in the coastal counties, however some have also been found in Orangeburg and York Counties. In a mature native termite colony there may be several hundred thousand workers. A mature Formosan subterranean termite colony may have millions of workers. The sheer numbers of Formosan



Comparison of termite swarmer and swarming ant.

subterranean termites usually make this type the most destructive. Formosan subterranean termites are also the most likely subterranean termites to establish above-ground infestations. Because much of the termite's food source is removed during clearing of a site for construction, as well as the common occurrence of termites in South Carolina, it is easy to see why homes are often attacked.

Prevention: The best way to protect a home against termite attack is with a combination of prevention and inspection.

Subterranean termites feed on cellulose containing materials, but are most destructive to structural wood. Termites find moist or decayed wood more attractive than dry wood, therefore the most extensive damage is usually found in areas surrounding structural or plumbing leaks.

Home and building owners should be alert to areas of moist or weakened wood. Several procedures which help reduce the risk of termite infestation include:

- Removal of any cellulose debris in or near the structure. This includes debris in crawlspaces, wood piles and thick mulch. In new homes, wood stakes from foundations and porches should be removed before concrete is poured.

- Provide adequate ventilation in crawlspaces, basement and between plants and exterior walls. This prevents excess moisture buildup.

- Eliminate any wood to ground contact, including wooden steps, support posts, etc. Some

pressure treated lumber should not contact soil. The tag on the lumber will specify proper use. Termites also can tunnel into a structure through foam board insulation that is in contact with the ground.

- Remove dense vegetation growing close to the structure's foundation or siding. Heavy vegetation traps moisture, which creates a better habitat for termites. Shrubs, trellises, and other vegetation make termite inspection more difficult and block ventilation of the structure.

- Use mulch sparingly close to the structure. Mulch is made up of cellulose and holds water, which can attract termites. Mulch should never be in contact with wood siding or framing of doors or windows.

- Provide proper drainage. Water must flow away from the structure. Keep gutters clean and in good shape. Eliminate areas in the landscaping where water is allowed to stand near the structure.

- When building a new home, have a termite pre-treatment by a licensed South Carolina pest control operator. These treatments may include a liquid chemical treatment (termiticide) to the soil or the installation of termite monitoring/bait stations. Termiticide treatments around new homes are generally done in two steps: after construction of the foundation footings and shortly after completion of the structure. Termite monitoring/baits stations are usually placed around the structure after completion.

Control: For many infestations, insecticide treatments must be used to control established termite colonies. On occasion, fumigation is needed when infestations are extensive. However, most subterranean termite control is done by applying either termiticides to the soil or termite monitoring/bait stations in or around the structure.

Liquid termiticide treatment involves applying termiticide to the soil underneath and adjacent to a building to create a barrier. These barriers are not applied to eliminate the termites nesting in the ground, but rather to kill any termites that would tunnel up to it, thereby protecting the structure. For optimum protection, a complete barrier should be established around and under the structure. Trenching around the structure and drilling into the slab, must be done to establish a continuous barrier. The actual length of time a termiticide treatment remains effective around a structure depends on thoroughness of the application, termite foraging intensity, conducive conditions and environmental conditions. Effectiveness of liquid termiticides varies due to soil and climatic differences.

Termite baits do not leave a residual chemical in the soil. However, they can reduce and may even eliminate a termite colony. They can be used in several different strategies, whether used alone or in combination with other treatment forms, and are especially useful in situations where other treatments have not been successful. Different systems are being developed for both below and above ground baiting. Below ground baiting usually involves installing bait stations every 10 to 20 feet around the building. The stations are then monitored for termite activity on a regular schedule. Above ground baiting involves installing bait stations directly over mud tubes or infested wood found in the structure. Currently there are a few professional-use termite baits on the market. These products are only available through trained pest control professionals. To know if termite baiting is a good option for you, interview several pest control professionals offering this type of termite control. Ask for the pro's and con's of each bait product and how they compare to traditional termiticide treatments.

Do-It-Yourself-Termite Control: There are termite sprays and a bait product on the market for home-owner use. However, seldom is it possible for homeowners to inspect and self-treat their own house without the proper equipment, training and knowledge of termite behavior and habitats.

PCO Selection: A licensed South Carolina pest control professional can do an excellent job, provide yearly inspections and offer a warranty.

When choosing a pest control operator, get bids from two or three firms. Be wary of prices that seem "out of line," especially those that are too low. A low price may mean low quality.

The professional you hire should graph the location--highlighting areas where termite damage has been found and any structural or drainage problems. He or she should also note any areas that were not accessible for inspection. The homeowner should repair all structural problems.

Finally, read the pest control firm's contract carefully. Some firms limit their liability for damage done to your home by termites after treatment. Others exclude damage done by specific termites such as the Formosan subterranean termite.

Your home is probably the most expensive purchase you will ever make. With a little time and knowledge,

termite damage can be minimized or perhaps avoided entirely.

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Prepared by Kristen van den Meiracker, Graduate Research Assistant, Eric P. Benson, Extension Entomologist/Associate Professor, and Patricia A. Zungoli, Extension Entomologist/Professor, Department of Entomology, Soils, and Plant Sciences, Clemson University.

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