WELCOME TO MODULE 2

Welcome to Module 2 in the four-part course on Wood-destroying Organisms.

Home Inspectors make an important difference in peoples' lives.

THE FOCUS

In this part of the course the focus is on the following topics:

- How termites damage wood – infestations – what they look like – how colonies develop
- 15 conditions that frequently lead to termite infestations
- Evidence of damage – recognizing the various signs of damage by different predators
- The steps of a proper inspection and report – the basic principles for conducting a visual, diagnostic inspection for wood---destroying organisms
- The scope of an inspection – using trained dogs – the required equipment
- Training and licensing requirements
- Bibliographic Materials

DETECTING TERMITE DAMAGE

- The first step is to detect the damage itself.
- This can be difficult as termites are secretive and love to bore themselves deep inside wood.
- Using a good flashlight, examine the foundation wall at the soil line, cracks in concrete floors and places where pipes and ducts come up through the concrete slab for tubes where termites could enter.
- A good indicator is a mud tube on the outside stem wall.

Termite damage

Termite mud tubes

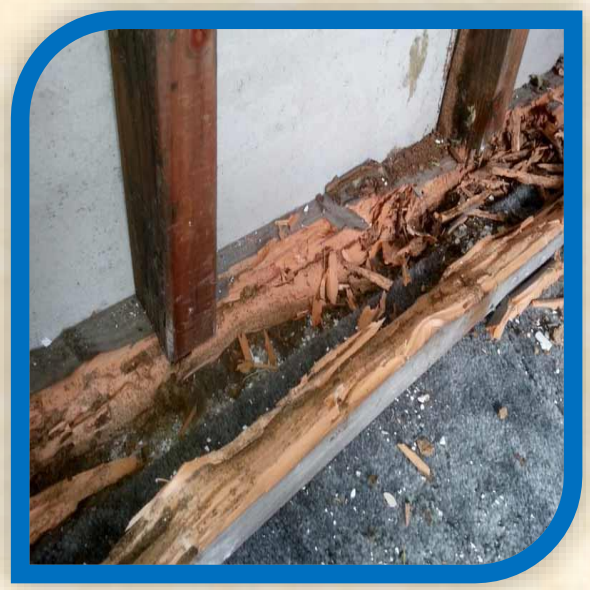
HOW TERMITES DAMAGE WOOD

- Signs that you have termites-in-residence include ***cracked or bubbling paint, mud tubes on exterior walls, beams or crawl spaces, or signs of termite droppings.***
- You can also tap on any wood that you suspect is infected: it will sound hollow.
- Interior damage may not become apparent until infestations are full-blown.
- Termite damage sometimes ***appears similar to water damage.*** Outward signs of termite damage include buckling wood, swollen floors and ceilings, areas that appear to be suffering from slight water damage and visible mazes within walls or furniture.
- ***Termite infestations also can exude a scent similar to mildew or mold.***

This is an excellent depiction of a termite colony which has infested this home.

IMAGES OF TERMITE DAMAGE

Here are a few additional examples of termite damage



Termites eat away at the wood which they reside in as a large social colony.

Mud tubes are an early warning sign of a termite infestation.

Another example of how termites damage one's home.

TERMITE COLONIES

- Termites are among the most successful groups of insects on Earth, colonizing most landmasses except Antarctica.
- Their colonies range in size from a few hundred individuals to enormous societies with several million individuals.
- ***Termite queens have the longest lifespan of any insect in the world, with some queens reportedly living up to 30 to 50 years!***
- Unlike ants, which undergo a complete metamorphosis, each individual termite goes through an incomplete metamorphosis that proceeds through egg, nymph, and adult stages.
- Colonies are described as superorganisms because the termites form part of a self-regulating entity: the colony itself.

Termites are social creatures

THE TERMITE CASTE SYSTEM

In many ways, the termite caste system mirrors higher order primate socialization and caste organization.

Caste system of termites:

A — King

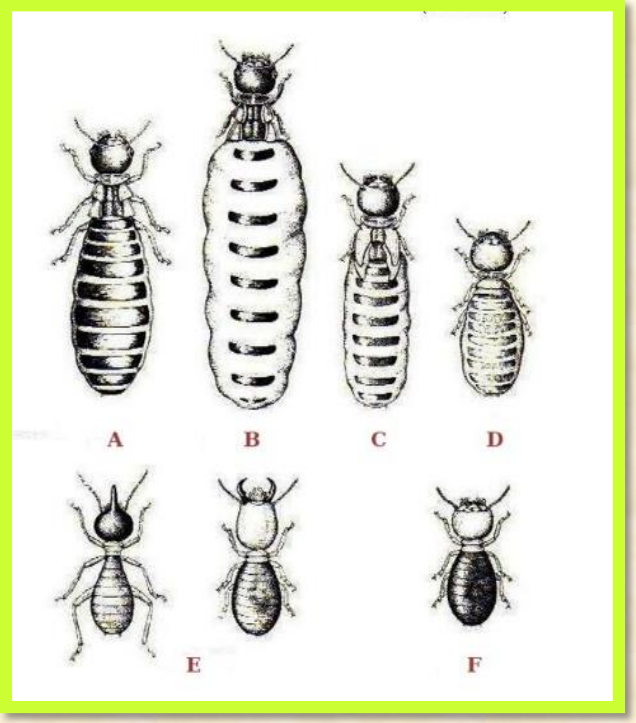
B — Queen

C — Secondary queen

D — Tertiary queen

E — Soldiers

F — Worker



15 CONDITIONS WHICH LEAD TO INFESTATIONS – PART 1

The first seven conditions:

1. Cracks in concrete foundations and open voids in concrete foundations are hidden avenues of entry.
2. Any wooden posts or supports set in concrete may be in contact with the soil underneath.
3. Concrete porches with earth fill may provide wood-to-soil contact.
4. Form boards left in place contribute to the termite food supply.
5. Leaking pipes and dripping faucets in the crawl space keep the soil under the structure moist.
6. Blocking crawl space vents with shrubbery will cause the air under the structure to remain damp and warm.
7. Construction debris in the backfill beside the structure will contribute to the termites' food supply.

15 CONDITIONS WHICH LEAD TO INFESTATIONS – PART 2

8. Low foundation walls and footings will provide wood-to-soil contact.
9. Stucco or brick veneer carried down over the concrete foundation allows for hidden access to the structure.
10. Soil-filled planters built up against the side of the structure allow direct access into foundation cracks.
11. Forms left in slabs, where plumbing drains enter the structure, provide access.
12. Wooden porch steps in contact with the soil are entry points.
13. Heating units in crawl spaces maintain warm soil temperatures for termite colonies year-round.
14. Paper is a wood product. Paper collars around pipes and ducts also provide access to the structure.
15. Wooden fences, trellises and other wooden adornments up against the side of the structure may provide access.

A PROPER INSPECTION – PART 1

A proper inspection should be carried out by a professional Home Inspector. They are the most qualified individuals to engage in this work. In the next 4 slides the focus will be on these steps and the report. Here are the steps to the home inspection:

1. Each job should start with a thorough inspection. Such an inspection and record keeping will help you avoid legal entanglements, provide proper explanation of the needed work to the owner, help you price the job properly, and help you or your employees do the job properly.
2. For a proper inspection you'll require these tools: a strong light, a sharp probing tool (e.g., ice pick, leather awl or screwdriver), a tape measure, coveralls, a hard hat, kneepads, graph paper and inspection sheets.
3. A moisture meter may be helpful. Specially trained termite-detection dogs have been useful in locating difficult-to-find colonies.

A PROPER INSPECTION – PART 2

1. A sketch drawn to scale showing the structure's ground area is very helpful in planning the work and should be kept in your files.
2. It should show all the details for a treatment and should include the location and spread of the infestation found.
3. The inspection of both inside and outside walls for termite shelter tubes should be carried out carefully, particularly when the tubes are near soil or in basements or crawl spaces.
4. Check for the presence of swarmers, or their shed wings.
5. Tapping exposed wood by hitting along the grain is also necessary, particularly if foundation walls are of hollow-block construction.
6. Termites frequently enter wood through the voids in the blocks and are very hard to detect.

A PROPER INSPECTION – PART 3

1. Soundings will tell you where the wood has been damaged or if the wood is easily damaged. If either occurs, probe further for tunnels or the brown, pasty substance called mastic that termites leave.
2. Many other pests, including insects and fungi, damage wood.
3. You should be able to distinguish damage caused by termites from that caused by these other wood-destroying pests; this is essential if you are to correctly assess a situation and properly advise your customer.
4. Walls constructed of stone, concrete, cinder blocks, hollow tile or brick may develop cracks through which termites can pass to sills and other wood members.
5. Carefully inspect such walls. Earth-filled porches and steps account for more cases of termite attack than any other building feature.

A PROPER INSPECTION – PART 4

1. Check wood paneling and other wall finishings on basement walls, wood partition walls and other wood construction in the basement, which extends from masonry to the sills or joists.
2. Note plumbing and utility fixture entrances and passages through the basement floor and the foundation.
3. Determine the presence of wells, whether driven or dug, and their distance from the building.
4. Investigate and make records of springs, sumps, drainage tiles or anything which might be contaminated or transport pesticides away from the treatment area.
5. Even if an infestation is found, the inspection should be complete and thorough to ensure all points of entry and damage have been found.
6. A light infestation may escape detection even with careful inspection.
7. Measure inside and outside to make sure that there are no hidden or blind rooms or double walls.

ADDITIONAL GUIDELINES & PROCEDURES

In addition to the guidelines outlined in the previous slides, home inspectors may come up against challenging and unexpected situations. Here are some additional procedures the inspector should follow.

- When called to a building in which a subterranean termite infestation is suspected, a pest control specialist must be able to determine whether termites are actually present. Sometimes an active infestation is obvious.
- Other times the problem may be difficult to see, requiring a great deal of effort and the use of specialized techniques and information to reach the correct diagnosis.
- It is important that termite control specialists know and understand building terms, such as **crawl space, footing, joist,** and so forth. Knowledge of these terms is helpful.
- To do a proper control job, the specialist must not only determine the point from which the swarmers came but also locate all exposed tubes and damaged wood.

THE INSPECTION REPORT – PART 1

- A well-designed inspection form allows the inspector to include all pertinent information.
- Such a form should include cross-ruled paper on which a diagram of the structure can be drawn to scale.
- This drawing should include the type of construction, all cross-walls, stairways, doorways, porches, stoops, and other parts of the structure that will affect the method of treatment.
- It is most important that it be drawn accurately and to scale because this may reveal hidden or inaccessible areas, which are often sites of severe infestation and damage.

Home Inspection Report

Inspector Information

Name:	John Smith
Company:	Smith's Home Inspections
Address:	1234 Maple Avenue
City:	Rosemont
State/Province:	IL
Zip/Postal:	60018
Phone:	847-555-2922
Cell:	847-555-1017
Fax:	847-555-2921
License #:	450.1001001
E-mail:	js@s-inspect-co.com
Web:	http://s-inspect-co.com

Client Information

Name:	John and Teresa Reynolds
Address:	1234 Sugar Court
City:	Mount Prospect
State/Province:	IL
Zip/Postal:	60056
Phone:	627-555-2822
Cell:	627-555-3488
E-mail:	jtreynolds2373@hotmail.com
Date of Inspection:	October 10, 2006
Time:	2:30 P.M.
Weather Conditions:	Fair, 70 degrees F.
Attendance:	Buyer, Buyer's Agent

Property Address:
5678 Lemon Street
Mount Prospect, IL
60056

All home inspectors must fill out detailed reports.

THE INSPECTION REPORT – PART 2

Each place where live termites are found should be clearly indicated on the diagram. All existing damage, inaccessible areas, and other unusual situations should be indicated. In addition, details of construction should be shown, including:

- The materials of which the outside walls and foundations are made (e.g., concrete block, stone, etc.) and whether the exterior covering extends below grade.
- The places where it will be necessary to drill through the concrete floor, such as in doorways, and driveways.
- Whether the building has a basement or a crawl space or is a concrete slab on grade.
- Recommendations for locations where ventilators should be installed.
- The conditions that may be conducive to termite attack (such as improper grade).
- Other pertinent information.

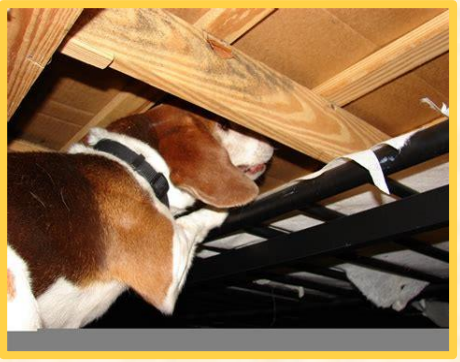
USING TRAINED DOGS FOR INSPECTION

- Some home inspectors use specially-trained dogs who will sniff out the termite colonies when they're difficult to locate. Here is why they're valuable:
- "Due to the termite dogs' keen sense of smell, a properly trained termite dog can detect termites behind walls making them closer to 95 to 97% accurate."
- Research from the Entomology Dept. of University of Florida has shown that properly trained termite dog teams are at least three times more accurate than human inspectors.

- A termite detection dog can smell live termites through the wall and detect live termites before they have time to do so much damage to a structure that it can be visually detected by a human.
- Termite Dogs can smell them, through drywall, concrete, paneling and all other building materials.
- It has been proven by team after team that a termite dog is the best termite finding and business building tool on the market for the Pest Control Industry.

WORKING WITH A TRAINED DOG

- Termite Detection Dog Handlers / Owners are known for their expertise and interest in detection dogs and termite management.
- All K9 handlers complete a training program before they take their dog into the person's home, the work place.
- The dogs are trained using live termites of many different species and are harvested in the correct manner to keep their original odor.
- This helps ensure the quality and integrity of the dogs and their training.



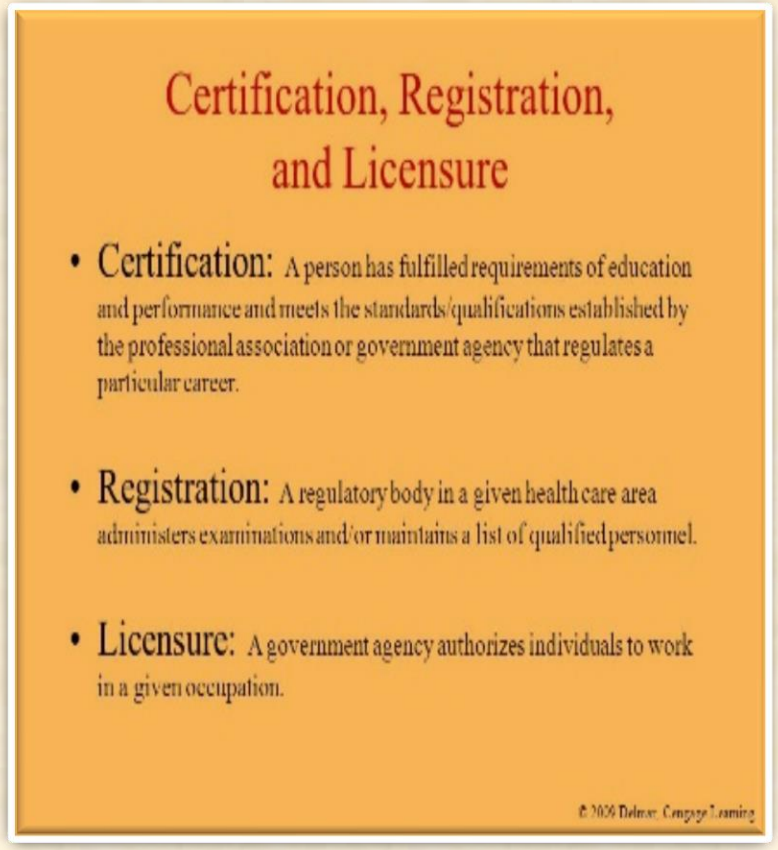
This highly-trained beagle is on the job.

K9 detection dogs find termites where humans can't.

TRAINING & LICENSE REQUIREMENTS

There are 3 stages of training and licensing:

- Acquire a Commercial Applicator's License
- Acquire a Business License
- Maintain the License

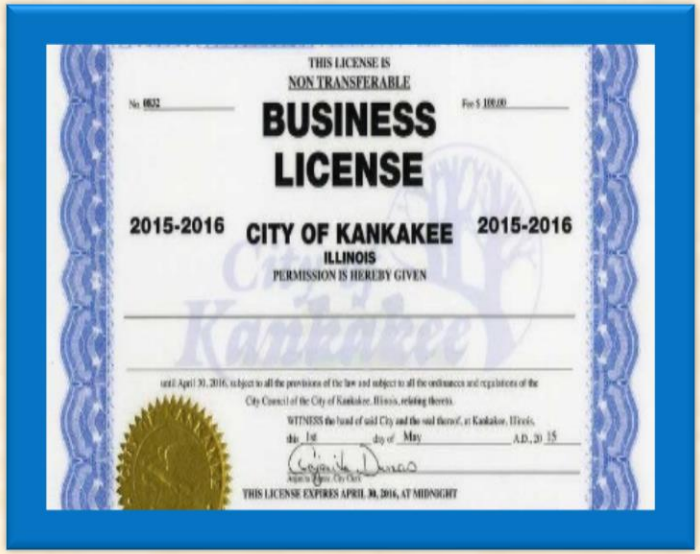


ACQUIRE A COMMERCIAL APPLICATOR'S LICENSE

1. Pay the Commercial Applicator's License fee which may vary by state.
2. Attend the mandatory WDO training.
3. Pass the exams (Usually you must pass Core and Category exams).
4. To become specifically licensed for termite eradication, additional licensing may be required.

ACQUIRE A BUSINESS LICENSE

- You must obtain a Pesticide Application Business License (PABL).
- File a Business License Application and pay the fee
- Provide proof of Errors and Omission Insurance
- Businesses are required to carry E&O insurance for the license to be issues and remain valid.
- This form of insurance typically has a minimum limit of $50,000.



MAINTAIN YOUR LICENSE

Annual License Renewal: Inspectors are required to renew their Commercial Applicator and Pesticide Application Business Licenses annually.

Re-Certification: All Commercial Applicator licensees are assigned a three -year period during which to fulfill their recertification/Continuing Education requirements.

The state's Department of Agriculture may require each licensed WDO inspector to complete five hours of re-certification every three years, for example.

These hours may include Core training and Category specific training. License holders who do not complete the required CE hours during their licensing period are usually required to re-test.

BIBLIOGRAPHY

In conclusion, here are some excellent resources to utilize in the continuation of your education in this topic. This is by no means an exhaustive list on this subject, but it provides a good start.

- Bennett, G.W., and J.M. Owens (eds). *Advances in Urban Pest Management.* Ean Nostrand Reinhold Company, New York.
- Furman, D.P., and E.P. Catts. 1982. *Manual of Medical Entomology* (4th ed.). Cambridge University Press.
- National Pest Management Association. Pest Control Publications. Publications Resource Center, 8100 Oak St., Dunn Loring, Virginia 22027; (703) 573-8330; www.pestworld.org.
- Riergart J.R., and J.R. Roberts. 1999. *Recognition and Management of Pesticide Poisonings* (5th ed.).
- U.S. Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances.
- White, R.E. *A Field Guide to the Beetles*. Houghton Mifflin Co., Boston. Mass.

END OF MODULE 2

This is the end of Module 2 in our four-part course on Wood-destroying organisms. Please, proceed to the 10-question quiz. Once you have completed the quiz, you may proceed to Module 3.