

Got Termites!!!



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Summer is here and so are the termites. Termites are well known pests in many parts of the world including Arizona, where they consume cellulose-based materials such as paper and wood. Across the nation, termites are estimated to cause nearly two billion dollars damage annually to structures. Depending on the area of the state you live in, termites are the number one urban pest.

Termites belong to the order Isoptera (iso-ptera = equal-winged), which refers to the adults that have two pairs of equal length wings. There are seventeen species of termites that occur in Arizona, but only seven species are considered to be economically important. Scientists have placed these species into three broad categories based on their habitat: *subterranean*, *damp-wood*, and *dry-wood*. Subterranean termites derive their name from the fact that they must be in contact with soil as a source of moisture. For these termites to move into a wood source above ground, they construct “mud” tubes made of soil, soft fecal matter and wood chips. Subterranean termites are the most common termite pest in Arizona and their presence is easily observed. Damp-wood termites are found in sound dead wood that is moist. These termites nest in soil and come to wood for food, but are not considered economic pests. Dry-wood termites are capable of infesting dry wood that is not in contact with the ground. Because they do not construct earthen mud tubes, infestations are more difficult to detect. A sign of dry-wood termite infestation is the presence of hard, dry fecal pellets that resemble fine sawdust.

Identification

Winged ants are often mistaken for winged termites, but several characteristics can be seen with the naked eye that will

help differentiate the two insects (Figure 1). Ants have two pairs of transparent wings of unequal size, while termites have four equal-sized wings that generally fold over the back. In addition, the region of the body behind the wings is “pinched” in ants but completely straight in termites. Termites are social insects that live in large groups of closely related individuals of many ages. A female reproductive individual, called a queen, lays eggs that hatch into nymphs. Depending on the species and the colony demands, these nymphs develop into wingless adult workers. These are the “white ants” that you might see if a mud tube or a piece of wood is opened. Duties of these worker termites are to care for the eggs and young, feed and clean other termites, forage for food, and construct and repair mud shelter tubes. However, these same nymphs at a certain stage can turn into individuals with large jaws (soldiers) that defend the nest from intruders. The numbers of nymphs increases as the colony matures and each colony has the potential to be made up of thousands of individuals. A mature dry-wood termite colony may have more than 2,500 individuals, while a subterranean termite colony may have over a million.

Detection

As discussed previously, even though termite colonies are made up of numerous individuals, they are quite secretive and spend most of their time inside wood. The homeowner should inspect his/her home twice per year for signs of termite activity. Furthermore, detecting and preventing structural damage differs between dry-wood, damp-wood and subterranean termites. Subterranean termite mud tubes are visible on walls or coming out of the ceiling and are called “drop tubes” (Figures 2 and 3). Other signs of termite

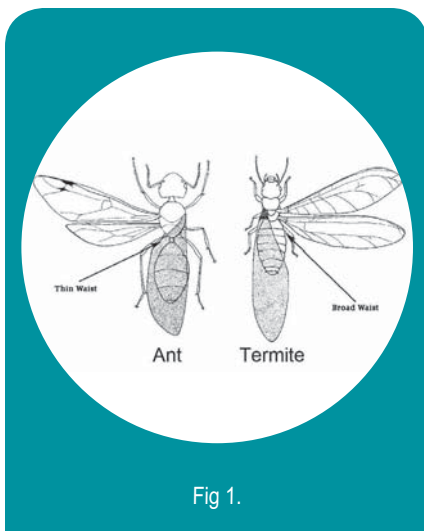


Fig 1.

Comparison of termite and ant morphology.



Fig 2.

Subterranean termite "drop tubes."



Fig 3.

Subterranean termite "mud tube" on the foundation of a house.

activity include: holes in wood that have appeared since a last inspection; pellets or sawdust that keeps coming back; piles of wings near light sources; and swarming termites. Dry-wood termites are detected by visual and non-visual methods. These include inspection of wooden structures and furniture for fecal pellets, and damage. Wood, which has a dull or hollow sound when tapped, should be examined closely. Careful probing of wood with a sharp instrument may also disclose drywood termite galleries. Visual notice of infestation also may be provided by evidence of dispersal flights by winged adults. Non-visual means of detection include acoustic emissions, sound amplifiers, metabolic gas detection, and canine olfaction (specially trained sniffing dogs). Although these methods are effective in detecting an infestation, they do little to delimit the extent or size of the infestation.

Control

Lack of knowledge as to the size of a dry-wood termite infestation directly impacts the control options that can be implemented. Thus, in most parts of the country including Arizona, control of dry-wood termites is primarily by whole-structure treatment by fumigation. This method is generally 100% successful in elimination of the current dry-wood termite infestation. If an infestation is small and can be isolated, removal of the infested wood is another alternative. Local and "spot treatments" for dry-wood termites can also be accomplished by various chemical and non-chemical methods. Wood injections with various chemicals have at various times also been utilized for control. Non-chemical local control is possible by wood surface electrocution, and microwave radiation. Remember, many of these control products are only available to the pest management professional.

Control of subterranean termites can be achieved by either liquid barrier treatments, local or "spot" control, or population control by baiting systems. The application of liquid termiticides to the soil to form a chemical barrier between the wooden structure and termite colonies existing beneath soil has been the primary method of control of subterranean termites. Soil insecticide barriers involve trenching around the perimeter of a home, and drilling concrete slabs for injection of various chemical

insecticides.

Population control of termite colonies has been achieved to varying degrees with commercially available baits containing insecticides. The bait contains an insect growth regulator in edible bait that subterranean termites pass along to nest mates by grooming and food transfer. These baits have had varying success in reducing foraging activities of populations of target termite colonies, but not necessarily eliminating colonies. Baiting methodology has been used since the 1990s and has seen rapid expansion in the last ten to fifteen years.

Prevention

Termite colonization and subsequent damage can often be prevented through proper building and landscape design. There are many things to consider, but the following are some good general guidelines to prevent termite damage to structures:

- Inspect your home twice per year looking for signs of termite damage or activity.
- Keep all substructural wood at least 12 inches above the soil beneath the building.
- Maintain structures to prevent moisture inside walls and within the structure.
- Keep attic and foundation areas well ventilated and dry.
- Use screening over attic vents and seal other openings, such as knotholes and cracks, to discourage the entry of winged drywood termites.
- Reduce chances of infestation by removing or protecting any wood in contact with the soil on or near the structure.
- Prevent landscape plants and water from irrigation systems from coming into contact with the structure.

In summary, prevention is the most important step in termite management. If you have a termite infestation, do not panic. For most homeowners, a reputable pest management professional should be your first option. They have the expertise, the equipment and materials to do the job. Once you've hired a professional, make sure that you get everything in writing and remember service after the sale is also important.