



Termites as a Household Pest

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Introduction

Termites are tiny, soft-bodied, greyish-white insects with moniliform antennae and biting and chewing types of mouthparts. Alate forms have compound eyes, whilst apterous forms do not. During swarming season, wings are often only present in their sexually mature form and are further shed, and the remnant or stump that is left behind is referred to as scale. Both genders are devoid of external genitalia. They are eusocial, polymorphic insects that live in colonies. Termites are a significant household pest that severely destroys furniture in homes. The caste structure of termites, food digestion behaviour, their classification and management will all be covered in this article. All the above-mentioned topics are crucial for better regulation of pests.

Caste System in Termite Colonies

Caste refers to any collection of people who carry out the same task. In a termite colony, there are four different castes: the king, queen, workers, and soldiers. Typically, the king fertilises the queen and aids her in building the nuptial chamber. Additionally, it aids the queen in raising the first brood. In the colony, there is only one queen, but following fertilization, she grows to huge proportions. Stretching of the intersegmental membranes to make room for the fully developed ovaries and fat bodies causes the abdomen to swell and this obesity is referred to as "physogastry". The colony's predominant caste is workers. Salivary glands and mandibles are fully formed in these. They dig up the ground and construct earthen mounds primarily out of soil and saliva, fix termitaria, go foraging, grow fungus gardens, and provide food for the king, queen, and soldiers. They take care of the eggs and the young ones. They are mostly accountable for harm done to crops and timber. Soldiers, who are further divided into two categories, Mandibulate and Nasute, are another significant caste responsible for defending the colony. In contrast to nasute soldiers, whose heads are pulled into a nozzle-shaped protrusion with an open frontal gland at the tip, mandibulate soldiers have big, well-sclerotized heads with well-developed mandibles.

Food Digestion in Termites

As termites feed by using their biting and chewing mouth parts, they mostly cause damage to furniture in homes. So we must have an understanding of termite wood digestion in order to better comprehend its damage. Termites can feed organically on cellulose. Flagellate protozoans are essential to lower termites whereas fungus and bacteria aid in the breakdown of cellulose in higher termites. Termitomycetes are the fungus gardens they create. Workers cultivate fungi on specialised substrate made from faeces. Conidiophores and conidia are produced by fungi. These fruiting structures are a significant source of organic nitrogen and vitamins. Fungus produces ligninase which acts on lignin and produces cellulose. This

cellulose is acted upon by cellulase produced by bacteria found in the gut Trophallaxis is another significant feeding behaviour seen in termite colonies. It can be characterised as a reciprocal exchange of digestive fluid. Additionally, it happens in two ways. Food shared between mouths is referred to as atomodeal food in oral trophallaxis and the food shared in anus to mouth feeding and is called proctodeal food in anal trophallaxis.

Classification of Termites into Families

1. Mastotermitidae
2. Kalotermitidae
3. Hodotermitidae
4. Termopsidae
5. Rhinotermitidae
6. Serritermitidae
7. Temitidae

Termitidae are referred to as higher termites, and the first six families are collectively referred to as "lower termites." Subterranean termites and drywood termites, which belong to these two families, are the main destroyers of wood and wood products in homes.

Subterranean Termites

To access food supplies and defend themselves from the open air, these termites create characteristic tunnels, which are frequently referred to as "mud tubes." Through these tunnels, they infiltrate homes from below. They have the potential to seriously harm a building's structure, occasionally leading to its complete collapse. Termites have tough, saw-toothed jaws that function like scissors and can bite off very small pieces of wood one at a time. Mud tubes on the home's exterior are a sign that they were there. Mud tubes resemble earthen and wooden tunnels. Other indicators include hollow-sounding soft wood in the home, darkening or blistering of wood structures, uneven or bubbling paint, and little heaps of what seems to be sawdust-coloured faeces next to termite nests. A swarmer has infected the house if it leaves discarded wings near doors or on windows.

How to get Rid of Subterranean Termites

Subterranean termites are drawn to moisture; thus it is best to prevent water gathering near the home's foundation if one wants to get rid of them. With correctly working downspouts, gutters, and splash blocks, one can direct water away. With sufficient ventilation, crawl areas humidity can be reduced. Never bury timber or discarded wood in the yard. Seal crevices and gaps in the home's foundation. Prevent wood from coming into contact with the ground, and keep a one-inch space between the ground and the wood parts of the building. Plan to get your home professionally inspected for termites every year. Contact a certified pest control specialist if you think your property may have a termite infestation so they can assess the situation and create an effective treatment plan. Another option is to apply liquid pesticides to the sub-slab soil; pyrethroids (permethrin, cypermethrin, and bifenthrin) deter termites from treated barriers.

Drywood Termites

They build colonies in a small piece of wood and are the most prevalent type of termite seen on wooden furniture. They don't have a worker caste like subterranean termites since immature termites do the labour before they develop. Prevent wood from coming into contact with the ground, and keep a one-inch space between the ground and the wood parts of the building. A piece of furniture, a picture frame, etc. that has been infested with drywood termites might be carried to new sites. *Cryptotermes* spp. and *Incisitermes* spp. are the two genera that make up the majority of drywood termite infestations.

How to Get Rid of Drywood Termites

Making sure that firewood and scrap wood are kept at least 20 feet away from the house will help you avoid it. Sealing all cracks and crevices in a structure is crucial because drywood termites establish new colonies by entering wood through tiny holes. Additionally, property owners should routinely check their buildings for signs of drywood termites, paying particular attention to window, door, and attic frames.

Chemicals Utilized in Termites Management

1). Common name :- Bifenthrin 2.5% EC

Brand name :- BAIFLEX 2.5 % EC

Dosage :- Ultra small (1 ml or gm to 50 ml or gm), Small (51 ml or gm to 250 ml or gm)

Purpose :- Recommended for control of termites in buildings and wood borer in plywood, veneer and wood. Do not enter treated area for 48 hours until sprays have dried

2). Chlorpyrifos 2% EC :- Protect wood against termites and borers

Conclusion

Termites are important household pest causing a lot of damage. Worker is the most important caste damaging household things made from wood. Termites utilize a variety of symbionts to break down and digest the resistible cellulose of woods. Out of all termite families, families having subterranean and drywood termites are most important when it comes to household pests. Early detection and the use of Bifenthrin 2.5% EC and Chlorpyrifos 2% EC could help control them.