Drywood termites in Queensland

About 300 species of termites are found in Australia and these are grouped into three broad categories - subterranean termites, dampwood termites and drywood termites.

Subterranean termites are generally ground dwelling or require contact with the soil or some constant source of moisture.

Dampwood termites generally live in damp rotting logs or rot pockets in dead or living trees.

Drywood termites obtain water from the wood in which they feed and have no contact with the soil, nor any other source of moisture.

Biology and damage

Drywoood termites include species in three genera: *Incisitermes*, *Bifiditermes* and *Cryptotermes* from the family Kalotermitidae.

Incisitermes barrett and *I. repandus* occur in coastal areas of north Queensland. They cause little economic damage. *Bifiditermes improbus* can cause damage in power poles. Eleven species of *Cryptotermes* are known to occur in Queensland. Most of these are confined to the coastal and adjacent tableland areas, but some have been recorded further inland. Generally each species has a relatively restricted distribution within these areas.

Of the five species that attack timber-in-service, only one is native to Queensland. Three of the four exotic drywood termites are confined to a small area in north Queensland, and the fourth to specific areas in southeastern Queensland.

Figure 1: West Indian drywood termite: reproductive form (left) and soldier (right).

The native drywood termite

The native drywood termite *Cryptotermes primus* is distributed widely throughout coastal and adjacent tableland areas and is common in most areas settled before 1940. It can attack the dead wood of living trees and timber-in-service. Colonies have up to 200 individuals, generally with less than 10 soldiers.

Soldiers are pale cream in colour, 4–6 mm long with short, thick, dark heads. Alates (winged forms) are pale yellow-brown with iridescent wings. Damage is caused to house stumps, flooring, skirting boards, beams, furniture and fence posts.

The native drywood termite is very common in the sapwood of house stumps, which may act as a source of infestation in flooring. Sometimes it enters flooring through emergence holes made by the Queensland pine beetle. In natural situations, it is often found in association with other termite species.

The West Indian drywood termite

The West Indian drywood termite *Cryptotermes brevis* (Figure 1) is considered the world's most destructive drywood termite and has caused considerable economic damage to timber-in-service in Brisbane, Maryborough, Rockhampton and Townsville in Queensland. It also has been recorded in Sydney and Canberra. An eradication campaign was implemented in Maryborough in 1968 and extended to Bundaberg in 1974.

The West Indian drywood termite was proclaimed a notifiable disease under the *Diseases in Timber Act 1975*. In 1976, it was discovered in several multi-storey buildings in Brisbane and a major fumigation program was undertaken in 1979. More than 600 buildings, including suburban houses and many furniture pieces have been treated in Queensland since then.

Figure 2: Drywood termite frass.

West Indian drywood termite attack is restricted to construction timber, furniture and, rarely, paper products. There is no record of it occurring in other situations.

It is most commonly found in pine, especially hoop pine, and cabinet woods such as maples (*Flindersia* species), red cedar (*Toona australis*) and silky oak (*Grevillea robusta*).

West Indian drywood termite frass (faecal pellets, Figure 2) from hoop pine is characteristically reddish-brown and gradually blacken with age. Typically *C. brevis* frass is larger and more pointed than frass of the native drywood termite. The head of the *C. brevis* soldier is more wrinkled than that of *C. primus*.

Cryptotermes cynocephalus and C. domesticus

Cryptotermes cynocephalus and *C. domesticus* were introduced to areas around Cairns, and further northward, from South East Asia and the Pacific region, principally through commerce. Similarly, *Cryptotermes dudleyi* is established on Thursday Island. In these areas *C. domesticus*, in particular, causes substantial damage to houses (flooring, internal partitioning, battens, plywood sheeting and doors), furniture, posts and stumps.

Attack occurs in a wide range of timber species. Only on Yam Island and at Mossman has *C. domesticus* been recorded in dead stumps and native shrubs in natural bushland

Building inspection

Regular inspections will not prevent attack, however, they will minimise the amount of damage caused before infestations can be eliminated.

Where to look

Drywood termites may be found in any wooden part of a building from ground to roof, in furniture, ornaments or paper articles. They have been found in a wide range of timbers including rainforest timbers, pines and less dense hardwoods. The sapwood of most timbers used in buildings and furniture is also susceptible.

What to look for

Look for small piles of frass (Figure 3). The frass consists of pellets which are hard and smooth with a sandy feel, quite small (about five pellets on a pinhead), and similar in shape, size and colour (light to dark brown, sometimes black or reddish). Unlike ant debris, with which they can be confused, the piles do not contain fibres or parts of dead insects.

Figure 3: Galleries and frass in a section of pine.

Careful examination of the timber near the frass usually reveals a small hole (about 1 mm diameter). This may be difficult to find as it is often sealed when not in use. Sometimes infestations are discovered by accidentally breaking into a gallery in floorboards, windowsills or other wooden parts of a building. Rarely, collections of termite wings occur around windows or in the corners of rooms.

What to do

If you find evidence of drywood termite activity, collect a sample of the frass or termite wings and, if possible, several soldiers. For advice, contact the

Customer Service Centre: 13 25 23.

Prevention

Most of the preventative strategies employed against subterranean termites in houses do not prevent drywood termite attack. Drywood termites can enter a house in infested second-hand timber (including furniture) or by flying in.

Thoroughly examine second-hand timber and furniture for drywood termite activity before taking it into a house. Preventing entry by flight is more difficult. Most modern building designs, however, do not encourage drywood termites to enter in this way.

Since drywood termites fly weakly, they spread very slowly. Therefore, when they disperse from a house, adjacent houses are most at risk from attack. It is in your interest to acquaint your neighbours with the habits of drywood termites.

Treating active infestation

If you suspect drywood termite activity, send a sample for identification (as described above). Identifying the insect and describing the extent and site of activity will help determine the appropriate treatment.

West Indian drywood termite (*Cryptotermes brevis*)

The West Indian drywood termite is a notifiable disease under the *Diseases in Timber Act 1975*. Necessary treatment of this termite is presently undertaken and supervised by the government, without cost to the householder. Tent fumigation of buildings is used to eradicate this pest (Figures 4 and 5). Strict supervision and specifications ensure set standards are maintained.

Other species of economic importance

Where other species are involved, you may have several options depending upon the extent and site of activity. The extent of the infestation can be found by 'sounding' the timber with a blunt instrument, such as the handle of a screw-driver or chisel. Areas of infested timber sound hollow when hit.

Contact a professional pest controller.

Living trees

Drywood termites in living trees usually do not pose a threat to the tree. *Cryptotermes primus* and *C. domesticus* can attack both the dead wood of living trees and timber-in-service.

Where drywood termite activity in a tree is suspected collect a sample of frass and, where possible, several soldiers. Label it and contact the

Customer Service Centre: 13 25 23.

These reports and collections will also help define the distributions of both native and introduced drywood termites.

Summary

Drywood termites cause considerable damage to timber structures in coastal areas and adjacent tablelands in Queensland. Each of the four introduced species has a restricted distribution within this zone, but the native *C. primus* is more widespread. Other native species are of little economic importance.

Knowledge of the habits of drywood termites and regular inspections of buildings and houses are the best insurance against these pests.

The West Indian drywood termite is a notifiable disease and treatment, at present, is done without cost to the householder. Therefore, it is recommended that the species is identified before treatment begins.

Figure 4: Fumigating a large city building.

Figure 5: Fumigating a suburban house.

More information

West Indian drywood termite.
http://www.daf.qld.gov.au/forestry/pests-and-diseases/west-indian-drywood-termite

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Website: www.daf.qld.gov.au