

Termite Aggregation

By Ion Staunton Abridged from his presentation to the
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Aggregating subterranean termites.

This session is to discuss the purpose of termite aggregation and why the practice of termite aggregation is a major factor in colony elimination.

The Purpose.

The purpose of aggregation is to encourage large numbers of termites to a device which can be treated with minimum disturbance so they will continue to do the instinctive things such as harvest food, groom workmates and in this scenario, carry the contaminant back to the nest where it effects nymphs, soldiers, developing alates and royalty.

Because it works, aggregation practices can significantly reduce the pressure on the termite barriers - both physical and chemical. With a lot of dollars invested in the installation of barriers, it makes good sense to also try and eliminate any termite colonies from the surrounding areas. Anecdotal wisdom suggests that over 95% of termite colonies attack a house from outside the confines of the house. By setting monitors around the house, the chance of intercepting termites approaches the high probability level.

Since the first use of ant caps and especially since the 1950s when dieldrin, chlordane, aldrin and heptachlor offered decades of effective chemical barrier, the pest and building industries have promoted a fortress emphasis to owners of homes. We built fortress homes incorporating various barriers and we cradled them on a continuous envelope of chemically treated soil.

It is my carefully considered opinion that more than 80% of Australian houses are within 25 metres of at least one termite colony. The colony may be only a few months old, and many of them do not survive, but in time if they do, these insignificant entities can and do become major threats to those homes depending for survival on physical and chemical barriers. Like Red Indians circling the fort awaiting a lapse in security, termites are all around our houses awaiting a lapse in protective vigilance.

One reason why termite treatment is such a high proportion of a pest manager's income essentially is because the fortress fails! And much too often.

If the owners of an eaten-out house catch on to the fact that you did NOT offer termite monitoring and aggregation treatment to eliminate the surrounding colonies which almost certainly were there at the time of your treatment, you'd better have some high grade professional indemnity insurance!

In fact, after today's session, once I've convinced you of the validity of termite aggregation and once professional indemnity insurers also recognise the validity of termite aggregation, you will be obliged to offer and practice it as another, essential part of your termite management procedures.

Let's explore the reasoning behind this claim....

When a pest management technician is called out to a house that termites have attacked, no matter how insignificantly, the Australian Standard says an attempt must be made to eliminate the colony before applying protective measures.

This is not often possible. A usual problem is that the homeowner has been the accidental discoverer of the termite infestation and, instead of leaving the attacked area alone or trying to put things back as they were, the owner often embarks on a frenzied search to determine the extent of the damage. By the time the technician arrives on the job, there is usually little chance of finding undisturbed areas of activity where a contaminant can be introduced for successful transfer back to the nest site by sufficient numbers of workers.

It is axiomatic that the more termites and the more active workings contaminated during a treatment, the higher the probability of a successful kill of the colony. Conversely, few workers contaminated: little chance of success.

However, when the colony cannot be found, and that is a hugely significant proportion of the time, it is essential that you should offer to at least try to have the termites find an aggregation device. Termites find bits of wood around a house and they can and do find aggregation devices.

The Practice

If you just want to know if there are any termites marauding through a backyard, a simple scattering of timber off-cuts through the garden will provide a guide within 2-3 months... often less. However, turning over a wooden block breaks the connecting access tunnel back to the nest. Too much luck is called for to think of attempting a treatment in this situation. The termites will be disturbed. They will **not** come back if they are *Schedorhinotermes* sp. or *Coptotermes michaelsoni* if you're from WA.

This fact of life highlights an important truth: **aggregation is of little value if you can't easily treat the massed numbers without disturbing them.** Unless termites can carry on their instinctive role after you've packed up and driven off, your success in aggregation is not going to be rewarded by the demise of the colony.

Design

Design of the aggregation device is critical to success. Having termites find devices is easy, but, you have to be able to treat sufficient numbers of termites in a way they will keep on working.

Here are some factors to be considered:

Attraction. Termites have a simple food requirement: moist cellulose. *Eucalyptus regnans* is given the No.1 spot on the list of attractive-to-termites Australian timbers by the CSIRO. Oregon and various pines are up there with it. Cypress pine, satinay or turpentine, some cedars and ironbark are well down the list of favoured flavours. Cardboards and papers are popular with termites because they are easy to harvest, however these processed cellulose products can quickly rot away in very damp situations. During the rotting process carbon dioxide is released sending a fragrant invitation to nearby scouting termites. Combinations of timber plus cardboard are no more attractive than either singly. However, *Mastotermes* eat so quickly, an added portion of timber will keep them around a little longer.

Termite access. Openings from the soil into the device must be at least 4mm and preferably double that. Although termite tunnels have been found metres deep in soil, most of the termite action is in the top 150 mm of the soil profile.

Size. The more termites you can treat, the more likely you are to be successful. Little blocks of wood and plastic ice cream containers hold fewer termites than large receptacles. Two litres of termites cannot be expected to deliver as effective a treatment as 6 litres of termites!!! If you get to treat that many without disturbance, it is almost impossible to fail.

Ease of introducing the treatment. Disturbance is the major cause of treatment failure. Treatment must be able to be introduced into the device with as little disturbance as possible.

Some may think the object is to get enough termites contaminated at the initial introduction so that at least some contaminated food makes it back to the royal platter.

However, I'm of the opinion that you should not settle for just the thousands of termites you initially treat, it's also the rotating 'shiftworkers' that come to the device over the next few weeks that will continue to harvest contaminated food and take it back.

Therefore, if you can treat without undue disturbance it will be more likely to produce a successful result.

My reason for designing the TermiteTrap to be mostly above ground is essentially to eliminate disturbance at inspection and treatment time. With the window up high there is no need for the homeowner or the technician to remove the cap for an inspection. Drilling holes in the side for the introduction of a dust or foam or quickly adding a cellulose matrix treatment at the top is a minimal disturbance.

Siting. So, where do you put them? If there is any history of termite activity in the yard, outbuildings, fences, retaining walls, trees, or the house itself, siting the monitors close to those places is more likely to result in an early strike and success. Question if the neighbours have had termite problems and if so, put monitors appropriately close by. Trees, particularly those that develop a hollow pipe centre, are suspect.

Chemical barriers, including chemical treatment zones, should not be disturbed by the siting of aggregation devices. As the chemical is almost always adjacent to the walls and out no more than 300mm, the devices should be set with a space of, say, 400-500 mm between it and the wall.

Garden beds are probably the best sites for a couple of reasons: the soil is usually kept moist for the sake of the plants and there may be some needed shade if the devices are subject to hot midday sun.

Aggregation devices can also be used inside and under buildings. They should only be directly affixed to timbers which are known to contain active termites. The device should fit flush to the timber or if any gaps, such as the grooves in skirting boards or architraves could allow light into the device, they must be filled with say damp wads of paper towel. (Of course, an opening of about 10mm x 4mm should be made in the surface of the timber so the termites know the matrix is available).

If termites have come up through the expansion joints in the concrete floors of a factory, it is well worth fabricating and setting up a long, large device over and along the joint.

Inspection. Any disturbance during the monitoring inspection is to be avoided, most particularly with *Schedorhinotermes* sp. This genus is widespread in Australia and inspecting with minimum or nil disturbance is an important factor. The patented window in the TermiteTrap aggregation device serves two purposes: it triggers the natural instinct of termites to begin blocking the light out using mud in order to eat the bait material up close to the window, and secondly, it allows simple, undisturbed inspection.

The future.

The CSIRO survey which reported that 32% of Australian homes have a history of termite infestation goes some way to quantifying the termite threat to homes.

Mr Doug Howick at a 2004 seminar produced other figures that:

130,000 homes are infested annually

The average cost of treatment per home is \$2,500

The average cost of repairs per home is \$4,500

Therefore average costs of \$7,000 times 130,000 homes...

Total cost of termite damage in Australia approx \$910m

(Visit the Architecture website: www.archicentre.com.au for updates)

The “urban sprawl” into new housing developments in bush and scrub areas (containing large numbers of termite colonies) means the threat to homes from termites is becoming greater.

Add to this the increase in waffle pod slab on ground building practice, the continued high usage of untreated pine framing timbers, builders who cut construction corners and do not give sufficient recognition of the principles in the Australian Standards... and you have a continuing recipe or formula to blow that \$910m to well over the \$billion.

As stated earlier, the fortress-only approach fails.

The resurgent focus by the pest management industry to find and eliminate the surrounding termite colonies is well under way.

It is incontestable; treatment of aggregated termites actually works!

From today on, you'll be derelict in your duty of care and responsibility to your customers if you don't offer aggregation.

The word is also getting out to your customers. TV and other media tell us often enough of fortress failures. Disgruntled customers **will** hear that termite aggregation devices lead to nest elimination. **If they hear about it after termites have damaged their home and you hadn't offered it... you could be in deep and costly trouble!**

Adding termite aggregation for elimination of colonies surrounding the 'fortress' is now imperative.

The reason we are in the service business is to provide services that benefit our customers. If they understand the benefits of monitoring and aggregation to them... they will want this service.

Summary.

Termite colonies, due to their natural instincts, are on an almost continuous search for new food sources.

Aggregation devices placed in potentially suitable sites in backyards around our suburbs give termites easy-to-find food sources.

If the devices aggregate sufficient termite workers to transfer a contaminant back to kill off the colony...

....and the treatment can be applied without unduly disturbing termite proceedings.....

...at least three things will happen:

Colonies will be eliminated

Our clients will save money and we'll make some

Civilisation as we know it will be saved.

Ion Staunton - The TermiteTrap

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EXTRACT OF C.V.

Ion Staunton – Who is he? What's he done?

Personal Profile

Director of The Termite Trap Pty Ltd

Director of Pestech Australia Pty Ltd

Life Member AEPMA

Co-author with Phil Hadlington Pests of Australian Home and Industry
Know your Australian Spiders and Ticks
Trees for Australian Gardens
Trees & Shrubs for Australian Gardens
External Studies Pest Control Course

Artist and author of AEPMA Pest Profile brochure series

Revisor of *Termites and Borers - a Homeowner's Guide to Detection and Control*.

Revisor of *Urban Pest Management in Australia*

Revisor of *Australian Termites and other common insect pests*.

Designer and inventor of the patented TermiteTrap with its window.

Industry History

Introduced to entomology and botany at Hurlstone Agricultural High, Glenfield, NSW, then a more detailed study of timber pests during employment with NSW Forestry Commission before joining Flick & Co in 1957. Topped the 1959 Pest Control course and in 1960 co-authored and illustrated the first industry text book with Phil Hadlington. This began 40+ years of involvement in teaching, training and encouraging personnel of the pest management industry.

He left Flick to become the Technical Officer for Houghton and Byrne for some years which included the fumigation of hundreds of homes for *Hylatrupes bajulus* before he was head-hunted to Coopers to introduce a range of the then new synthetic pyrethroids to the Australian aerosol manufacturers and a big involvement in grain insect pesticides. Seeing a market niche for a one-stop-shop for the supply of Pest management chemical and equipment needs, Ion set up in Cabarita and Kingswood in Sydney and in Brunswick, Melbourne before disappearing to graphic art and other non-pest activities in Qld.

Concurrently with the above activities, Ion was the founding Secretary of the UPCA in NSW in 1963 then of CAPCA which became the AEPMA. Recognising that opportunities for the industry would be missed unless a full time secretariat was in place, Ion and the team at the time reorganised the State association structure to a national organisation with broad, proactive objectives and membership fees that would support a secretariat that could take the initiative for the industry in its interface with government, other utilities, organisations and particularly the Australian community. Ion was elected Life Member of the AEPMA in 1989.

With the manufacture, sales and marketing of the TermiteTrap making each day interesting, he has no plans for retirement in the foreseeable future.