



Termite Control Practices

Since the late 1940's, the traditional approach to termite control in Australia has been the broad scale application of toxic chemicals as a termite barrier or treated zone. Up until 1995, the most commonly used chemicals were part of the organochlorine group (aldrin, dieldrin, chlordane and heptachlor). Since June 1995, the use of organochlorines has been banned. This was due to scientific evidence showing that organochlorines produced adverse health effects, polluted the environment and were becoming concentrated in our waterways.

Some termite management professionals still include the use of soil barrier treatments. These are intended to provide long-term chemical barriers in the soil beneath and around buildings, preventing the insurgence of subterranean termites. Current chemicals applied as repellent soil barrier treatments are chlorpyrifos (an organophosphate) and bifenthrin (a synthetic pyrethroid). Imidachlopid (a synthetic nicotine group) and fipronil (a reversible gamma – amino butyric (GABA) receptor inhibitor) are applied as non-repellent treated zones.

To be successful, soil barriers need to be extensive, complete and must properly bind with the soil substrate. The Australian Standard 3660 series states that termiticide emulsions are not effective against subterranean termites if used for the surface treatment of timber or if sprayed on materials other than soil (e.g. rock or stone on the ground or in fill). Special care must be taken to ensure that the barrier system is complete and well integrated so that no avenues of entry are left open for termites.

Application may be via the use of spray equipment, drilling or through the installation of reticulation pipes then pumping through hoses from tanks on the pest manager's truck. Piping systems allow for the regular application of chemical through feeder points much the same way as garden watering systems work. The questions of even coverage and potential chemical load are raised with this type of blind application. There is a built in cost for the life of the building to continue to have a chemical barrier supplied.

Chemical soil barriers require:

- a) Horizontal soil barriers to prevent vertical access of termites to the substructure of the building,
- b) Vertical soil barriers to prevent horizontal access of termites to the fabric of the building through the substructure,
- c) Soil barriers around all piers and service pipes where termites may gain access.

AS3660.1 - 2000 also notes that the complete protection of buildings from attack by subterranean termites is not always possible because of construction design, building practice or site conditions. The treatment of existing buildings is more difficult where access to voids and other enclosed areas may not be possible. The installation of chemical soil barriers does not negate the need for regular competent inspections.

Deficiencies of Chemical Liquid Termiticides

Chemical liquid termiticides applied as soil barrier treatments give rise to many questions concerning inefficiency of the treatments, health issues and the effects on the environment:-

- Human health**
- Acute toxicity issues, possible chronic and delayed effects.
 - Treatments may contaminate indoor areas where ventilation is inadequate.
 - Chemicals impact on many and varied aspects of human health.
 - The effects of solvents used in the chemical formulation.

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| Environment | <ul style="list-style-type: none">- Accumulation in or poisoning of aquatic organisms.- Accumulation in birds leading to reproductive effects.- Migration of residues in soils and groundwater following water run-off.- Volatilization of residues into air. |
| Inefficiencies | <ul style="list-style-type: none">- Invisible, with chemical analysis required to detect residues.- Inadequate coverage of chemical barriers in some substrates.- Non-continuous chemical barriers.- Poor chemical bonding in some soils and on rocks or rubble. |

Dusting Treatment Options

Dusting treatments (ie arsenic trioxide, fipronil and triflumuron) are not recommended as it is generally considered difficult to achieve sufficient transfer of the toxicant through out the termite colony. This may result in achieving only localised control of the infestation and may not affect the termite colony nest. Additionally, removal of arsenic treated areas (timber or termite mud workings) on completion of the treatment can result in undue hazard to the persons undertaking such work and may significantly increase the costs in future replacement of the timber and subsequent disposal. Dusting treatments can also make it more difficult to locate an active termite infestation in the future. Less hazardous and more effective treatments are now available.

Environmentally Responsible Control Strategies

Our approach to timber pest management differs significantly from a conventional chemical-based approach. Integrated Timber Pest Management is a process whereby knowledge of insect biology, ecology and habits combined with an understanding of building design enables a long-term timber pest management strategy to be devised. Alternative termite treatments are available and very effective.

The aim of a termite treatment programme should be to destroy the termite nest. This is usually done by way of baits that combine insect growth regulators with cellulose – the material that the termites are extracting from the timber. Since 2000, dusting treatments have largely been replaced with less hazardous and more effective baits.

All timbers on a property must be easily accessible to allow a licensed pest inspector to carry out regular inspections. This includes access to high-risk areas such as the concrete slab edge, timber wall frames where built on a concrete slab or timber floors in close proximity to the ground. The purpose of this is to allow detection of termites before they enter timber structures and to allow installation of baits where necessary.

Another vital component to managing termites in a building is to physically alter the structure to reduce its risk of termite attack (e.g. termites need moisture to survive therefore a structural modification would be to improve subfloor ventilation or to rectify moisture leaks). Timber lying on the ground will attract termites, so all timber must be stacked off the ground.

Baiting

Baiting may incorporate active bait applied directly to an active termite infestation and termite aggregation points that are monitored for termite activity. The bait is only ever applied to active termite infestations, either within a timber structure or a monitoring station. The bait will stop the termite individuals from growing and the colony from reproducing. This effectively eliminates the entire termite colony.

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