

PROFESSIONAL PEST MANAGEMENT

SAFEGUARDING YOUR STAFF, YOUR CUSTOMERS AND YOUR BUSINESS

 **Altriset**[®]
Termiticide

syngenta.

TM

There was a hole in the termite control industry. We've filled it.

- ▶ Rapid stop feeding mechanism
- ▶ Eliminated termites from structures within 90 days
- ▶ Long term protection
- ▶ Outstanding termite colony transfer properties
- ▶ Exempt from poison scheduling

No other termite product can offer all these features. With world-class performance and a favourable safety and environmental profile, ALTRASET is the solution the termite industry has been waiting for.

This brochure will provide you with the science behind the greatest innovation in termite control in Australia in over 10 years.

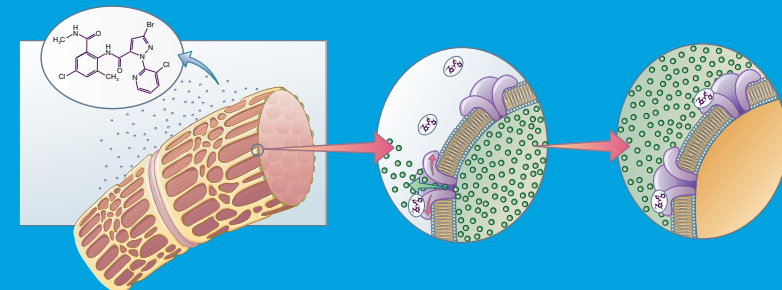
Laboratory and field study results prove ALTRASET stops termites feeding within hours, while delayed mortality allows increased termiticide transfer to provide complete termite elimination, critical to long term structural protection. This is reassuring as no further structural damage will occur and the source of the problem is removed. Even better, the physical/chemical properties of ALTRASET enable it to remain in the soil for an extended period, providing years of continuous protection.

ALTRASET is also the only liquid termiticide that has been exempt from poison scheduling by the Australian regulatory authorities making it the ideal product for use indoors and subfloors.

What makes ALTRASET different?

The class of chemistry to which chlorantraniliprole (the active ingredient in ALTRASET) belongs was inspired by the insecticidal properties of a natural substance found in the trees and shrubs of the *Ryania* spp. It targets the insect muscles (other liquid termiticides affect the nervous system) as is shown in the diagram below.

ALTRASET mode of action



Phase 1 Exposure	Phase 2 Activation	Phase 3 Paralysis and Death
Insect comes in contact with or ingests chlorantraniliprole the active ingredient in ALTRASET.	Chlorantraniliprole binds to and activates the ryanodine receptors located in the insect's muscles, and causes them to open.	Calcium ions flow out of the open ryanodine receptors, depleting calcium needed for muscle contraction. Paralysis of the insect muscles leads to death.

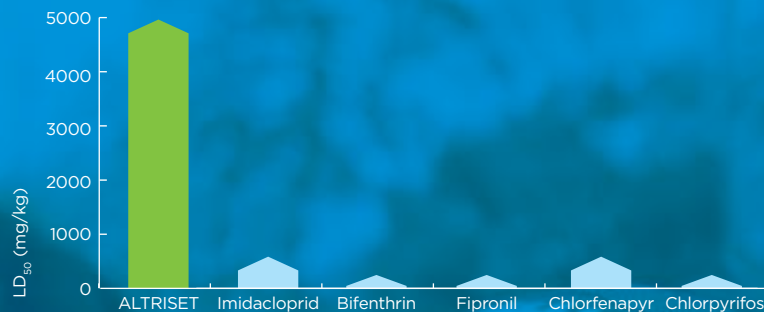
Low toxicity

The targeted, unique mode of action of ALTRISSET means it has a very low toxicity to mammals, birds, fish earthworms and even honeybees.

Chlorantraniliprole has an extremely low toxicity as the graph below illustrates. This is primarily due to the unique mode of action and the fact that only certain insect muscles are sensitive to and targeted by, its activity.

Higher values mean lower toxicity

Oral Toxicity of Rats (Mammals)



Quick reference

Active ingredient: Chlorantraniliprole

Dilution rate: 1 L makes 400 L

Application rate: 0.05% strength

The evidence worth chewing over

Studies have proven that ALTRISSET is highly effective against termites, stopping them feeding within hours, which prevents any further damage to the property that is infested.

Laboratory tests have shown that termites tunnel through the treated zone and quickly acquire a lethal dose of ALTRISSET. Once affected by ALTRISSET, termites will begin to exhibit increased aggregation, enhanced grooming and contact with other colony members for hours.

Affected termites will become more lethargic and show signs of muscle paralysis; decreased coordination and mortality will ultimately occur within several days. The delayed mortality and increased colony interaction are key reasons why ALTRISSET is so effective.

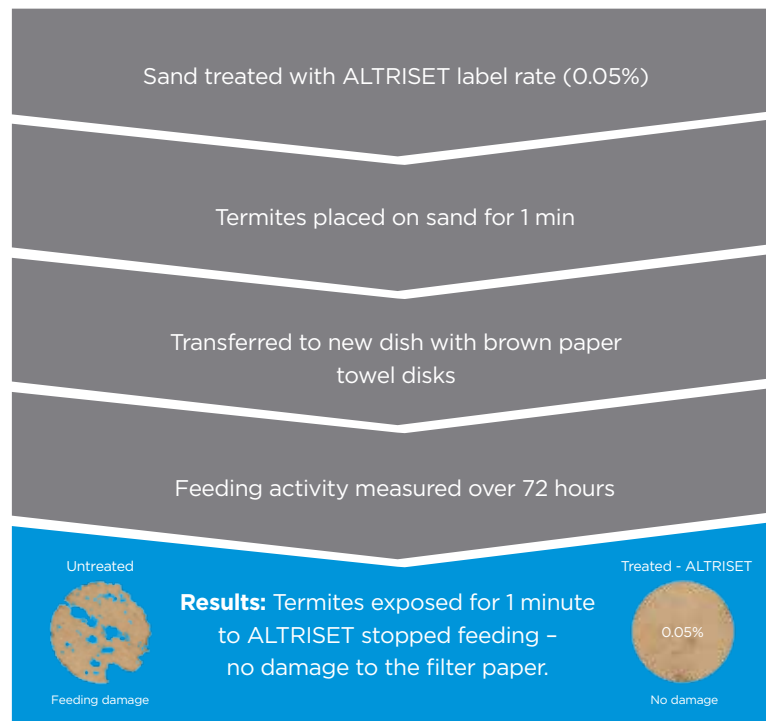


This picture illustrates a termite worker that tunneled through sand treated with ALTRISSET at 0.05%. The worker "picked up" and ingested large amounts of the active ingredient as evidenced by the glowing areas.

The high concentration of chlorantraniliprole on the mandibles of the termite causes the feeding cessation. Chlorantraniliprole on the cuticles of the termite is readily passed to other termites through contact and grooming.

ALTRISSET stops termites feeding within hours

The study illustrates that within 72 hours, after only 1 minute exposure to ALTRISSET, termites are unable to feed.

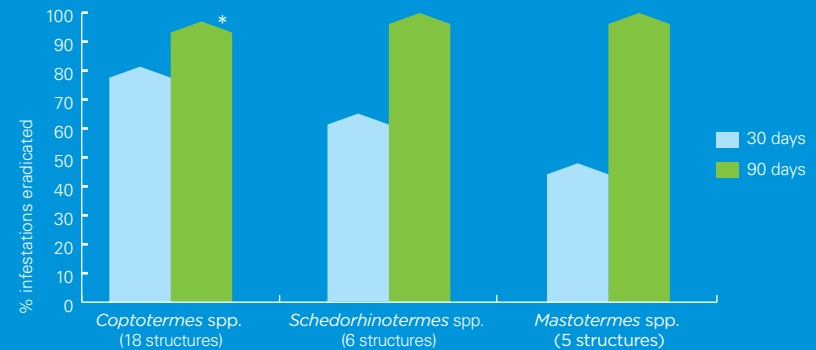


Source: Stine-Haskell Reserach (DuPont). *Reticulitermes flavipes*

ALTRISSET eliminated termites from structures in 3 months

Results in the following graph are from Australian home trials. All treatments were soil/perimeter treatments only – no direct treatment of active termites.

Speed of control by termite species



*100% control was not achieved in one house in WA within 90 days, due to a construction design that did not allow a complete barrier treatment to be applied.

Source: DuPont trials in conjunction with various pest management companies (2009–10).

Outstanding transfer properties for termite colony control

It is not always possible to locate termite nests so direct treatment of nests is not possible. Termites exposed to ALTRISSET don't die immediately and are able to transfer the active ingredient to other termites and back to the nest leading to a greater chance of complete termite colony elimination.

Aggregation effect

ALTRISSET affects mobility and increases aggregation. This delayed mortality and increased social contact accelerates transfer throughout the colony.



0.01% (1/5th of label rate) ALTRISSET: Termites begin to group and become more social.

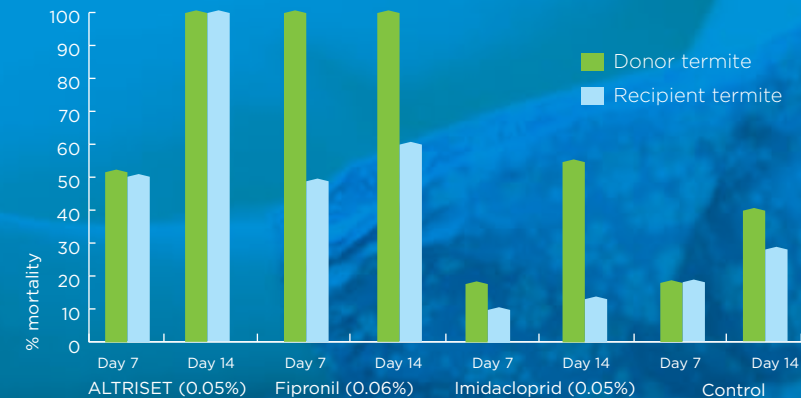
Untreated: Termites are 'independent' and moving freely within petri dish.

Conclusion: Even at 0.01% ALTRISSET exhibits unique behavioural effects on termites. After exposure, termites aggregate, increasing the social interaction among termites. This leads to increased chance of sharing ALTRISSET with unexposed nest mates and more comprehensive management.

NOTE: Not all the termites in the untreated group can be seen because they are hiding from the light under the filter paper, which is natural behaviour for untreated termites.

Source: Stine-Haskell Research (DuPont). *Reticulitermes flavipes*

Transfer of non-repellent termiticides from termites exposed to treated soil



Note: Fipronil and Imidacloprid are the active ingredients in a number of termiticides

Conclusion: ALTRISSET is transferred readily from donor termites (exposed to termiticide) to recipient termites (not exposed to termiticide), resulting in 100% mortality of all termites within 14 days.

Fipronil shows faster mortality than ALTRISSET with 100% mortality of donor termites within 7 days. However, only 60% of recipient termites are killed after 14 days suggesting that the fast action/transfer properties of fipronil are not as effective as ALTRISSET. Imidacloprid gave low levels of mortality and provided no evidence on termiticide transfer.

Source: Stine-Haskell Research (DuPont). *R. virginicus*.

Australian Field Trials

Field trials are completed as part of the registration process and provide an indication of the residual properties of termiticides.

The standard protocols are:

Vertical uncovered treatment - a stake in the ground

The termiticide is mixed with soil (similar to a trench treatment). This treatment is uncovered in an exposed location representing the worst case conditions. A wooden stake is placed in the middle of the treated soil.



Vertical uncovered site



Treated and untreated wood damage

Horizontal covered treatment - wood under slab

The termiticide is sprayed on the surface of soil. A piece of wood is then placed on the soil and then covered with a moisture barrier and a concrete slab. This is similar to injecting under a slab, although the placement of wood between the soil and slab is not representative of normal structural situations.



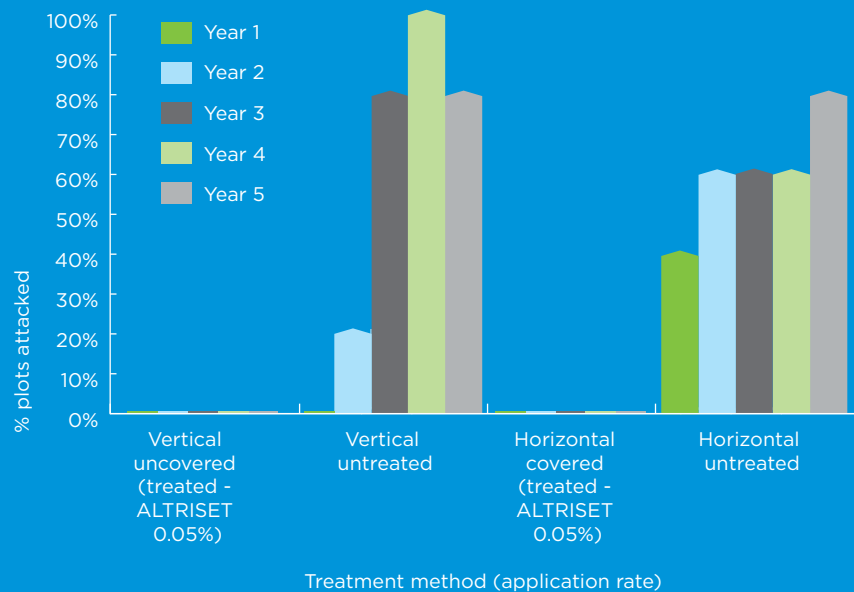
The wood in ALTRASET treated plots remains intact



The wood in untreated plots is completely "eaten out" - only the mudding remains

Gosford field trial

ALTRISSET termiticide was challenged under these protocols in a trial in Gosford (NSW). The performance of ALTRISSET at the Gosford field site was excellent, with both high and low doses delivering 100% protection in horizontal and vertical treatments after 5 years (see graph). Although the termite pressure in the first 2 years was relatively low, the high pressure in years 3, 4 and 5 (due to environmental conditions) provided a stern test.



Source: Agrisearch Service Pty Ltd, Gosford, NSW

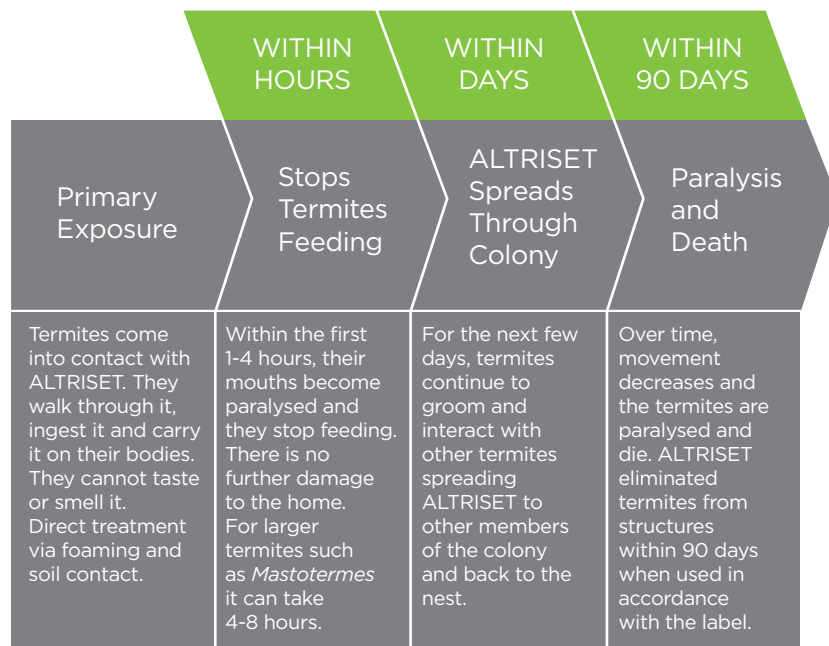
Product of choice for indoors and subfloors

ALTRISSET is designed for use inside and outside all structures. Additionally, given ALTRISSET is the only termite protection product that is exempt from poison scheduling, it is the ideal product to use in confined spaces such as subfloors.

Personal Protective Equipment is not required with ALTRISSET. No odour and no skin irritation means an improved experience for the applicator. Your clients will also be more reassured knowing that you are using a product exempt from poison scheduling inside their home or business.

Products	Facemask/ Goggles	PVC Gloves	Overalls	Respirator	Washable Hat
ALTRISSET	No	No	No	No	No
Imidacloprid	✓	✓	✓	No	✓
Fipronil	✓	✓	✓	No	✓
Bifenthrin	✓	✓	✓	No	✓

The ALTRISSET termite control timeline



ALTRISSET termite treatment protocol

We all know that termite control is not an easy process and requires thorough inspections and treatments by qualified timber pest control professionals using appropriate equipment and innovative products to ensure the control and elimination of termites is achieved.

We understand the challenges you face as a pest management professional. We are committed to working with you to find effective solutions to these challenges. ALTRISSET safeguards your staff, your customers and your business.

FOR LIFE UNINTERRUPTED™



To learn more about ALTRISSET Termiticide, contact Syngenta Professional Pest Management on 1800 022 035 or visit www.syngenta.com.au