

PROFESSIONAL PEST MANAGEMENT

UNIQUE CHEMISTRY. SATISFIED CUSTOMERS.

Technical Bulletin

FOR LIFE UNINTERRUPTED™



syngenta®

TM

THE LATEST INNOVATION IN LIQUID TERMITICIDE CHEMISTRY

Protect your customers' biggest investment from the threat of termites by using a product that will provide fast-acting, long-lasting control. Altriset® termiticide from Syngenta Professional Pest Management offers long-term control ensuring your customers' largest investments are protected from the potential destruction termites can cause.

Unique Mode of Action Delivers Excellent Results

Studies have proven Altriset is highly effective against termites with its unique mode of action, which halts termite feeding within hours of exposure. Once they are exposed to Altriset, termites will show increased aggregation and enhanced grooming, spreading Altriset to other termites. Affected termites will become more lethargic and show signs of muscle paralysis and decreased coordination, and termite mortality will occur within several days.

Low Impact on Beneficial Insects

In addition to its proven performance and effective control, Altriset has a low impact on non-target beneficial insects and was registered in 2010 by the U.S. EPA under its Reduced Risk Program*. Give your customers peace of mind by using a product that only targets termites and is effective at a low use rate.

*A reduced risk pesticide use is defined as one which may reasonably be expected to accomplish one or more of the following; (1) reduces pesticide risks to human health; (2) reduces pesticide risks to non-target organisms; (3) reduces the potential for contamination of valued, environmental resources, or (4) broadens adoption of IPM or makes it more effective. Altriset qualifies under one or more of the above criteria.



A Chemistry Like No Other

Altriset is the first termiticide product to feature *chlorantraniliprole* an active ingredient from the anthranilic diamide class of chemistry. *Chlorantraniliprole* is a synthetic compound that affects the ryanodine receptors in the insect muscle fiber, shown in the graph to the right.

Phase 1: Exposure

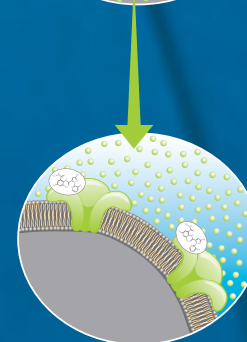
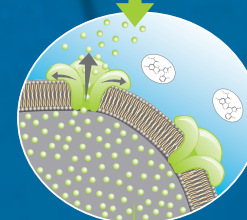
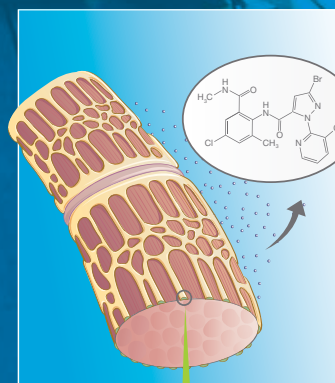
Termites come in contact with or ingest the active ingredient in Altriset.

Phase 2: Activation

The product binds to the ryanodine receptors in the termites' muscles and causes them to open.

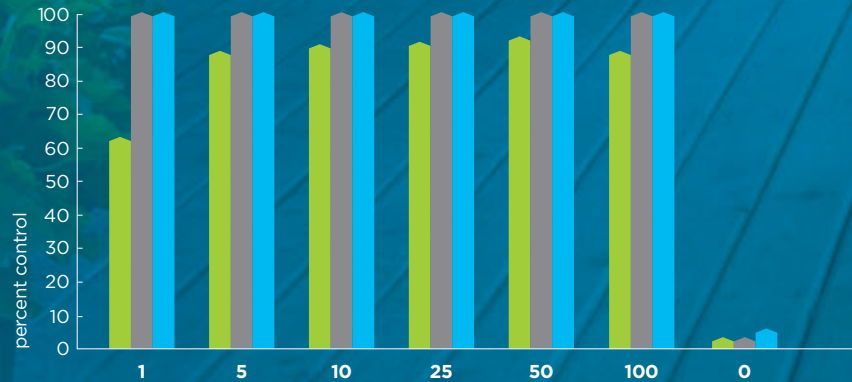
Phase 3: Paralysis and Death of Termites

Calcium flows out of the open ryanodine receptors, depleting calcium needed for muscle contraction. The resulting muscle paralysis leads to insect death.





Treated Substrate Test (*Reticulitermes flavipes*)



■ 3 DAT
■ 7 DAT
■ 21 DAT

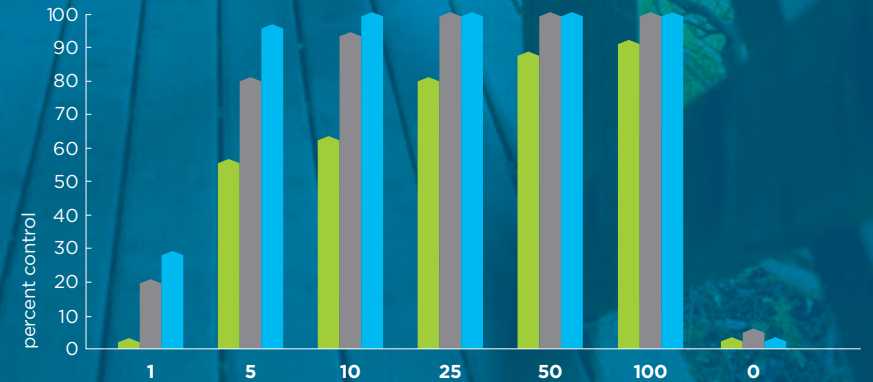
Parts Per Million of Altriset

DAT = Days After Treatment

In a constant exposure study with eastern subterranean termites (*Reticulitermes flavipes*) on treated sand, Altriset provided 100% termite mortality after 7 days at 50 ppm (expected concentration in soil after commercial application).

Source: 2009 Louisiana State University, PR098955

Constant Exposure Test (*Coptotermes formosanus*)



■ 3 DAT
■ 7 DAT
■ 21 DAT

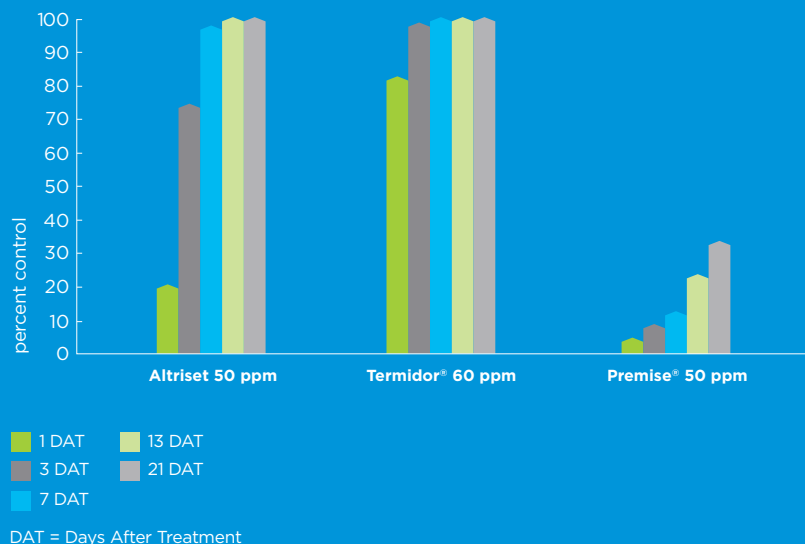
Parts Per Million of Altriset

DAT = Days After Treatment

In this study with formosan subterranean termites (*Coptotermes formosanus*), Altriset provided 100% termite mortality after 7 days at 50 ppm (expected concentration in soil after commercial application). These termites typically require higher doses of termiticide to achieve termite mortality.

Source: 2009 Louisiana State University, PR098955

Limited Exposure Test (*Reticulitermes flavipes*)¹

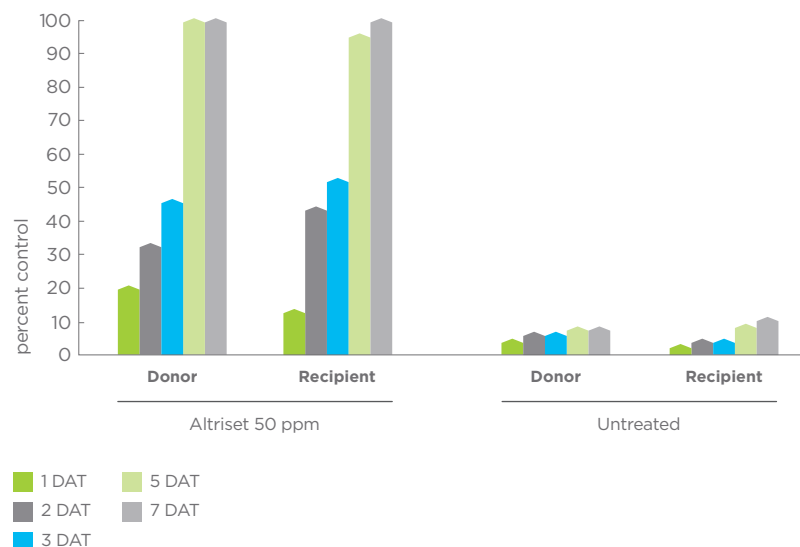


In this study, eastern subterranean termites (*Reticulitermes flavipes*) were exposed to treated sand for 30 minutes and Altriset provided 100% control at the lowest labeled rate. The delay in action for 1-3 days allows for enhanced grooming among affected termites.

Source: 2010 Stine-Haskell Research Center, PR106206

¹Trials reflect treatment rates and mixing partners commonly recommended in the marketplace.

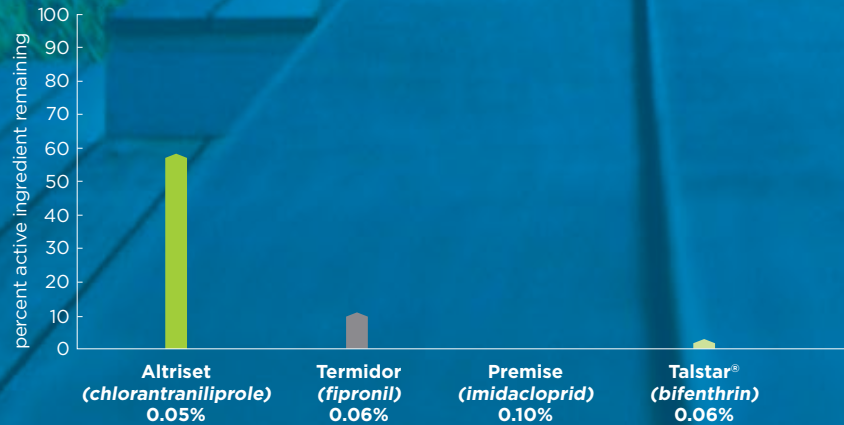
Horizontal Transmission Test (*Reticulitermes Hesperus*)



A sample of western subterranean termite (*Reticulitermes Hesperus*) workers (donors) were exposed to Altriset treated sand for 1 hour. Then, the donor termites were placed into test arenas containing untreated, dyed termites (recipients). After 3 days, Altriset provided 50% termite mortality among the directly exposed termites (donors) and the indirectly exposed termites (recipients). Within 7 days, 100% termite mortality was achieved among both donors and recipients.

Source: 2008 University of California Riverside, PR0895810

5-Year Pre-Construction Residual Test¹

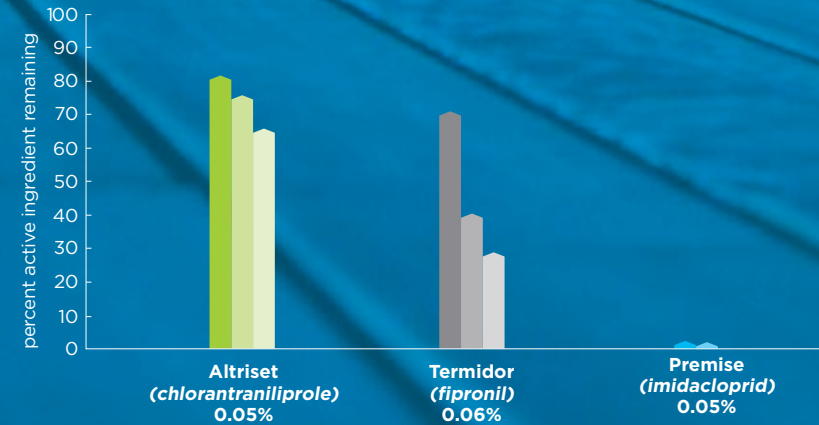


*Imidacloprid residues < 1 ppm after 2 years

In a modified U.S. Forest Service concrete slab plot trial, remnants of Altriset were high, with 57.2% of the original application remaining even after 5 years.

Source: Bradenton Research Center, PR039401

3-Year Post-Construction Residual Test¹



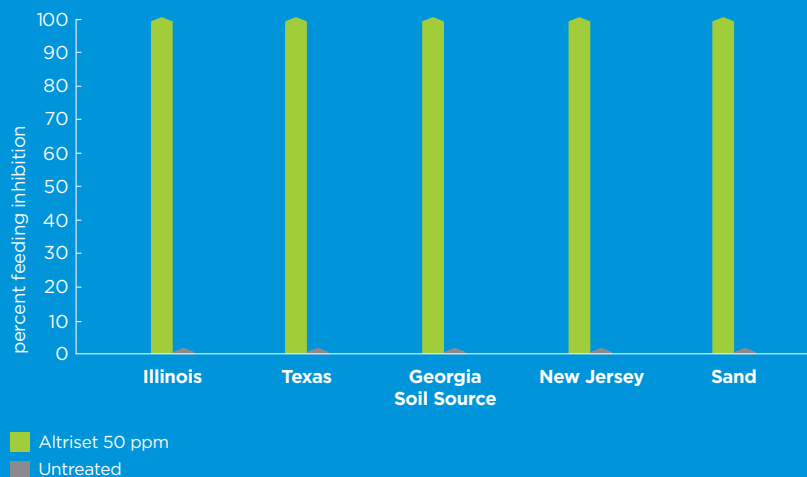
■ Altriset Year 1 ■ Altriset Year 2 ■ Altriset Year 3
■ Termidor Year 1 ■ Termidor Year 2 ■ Termidor Year 3
■ Premise Year 1 ■ Premise Year 2 ■ Premise Year 3

Long-term residual of Altriset was evaluated in a field trial simulating post-construction vertical barrier applications. After 3 years, soil samples taken next to the structural wall that received the termiticide applications still contained 66% of the original application of Altriset.

Source: Bradenton Research Center

¹Trials reflect treatment rates and mixing partners commonly recommended in the marketplace.

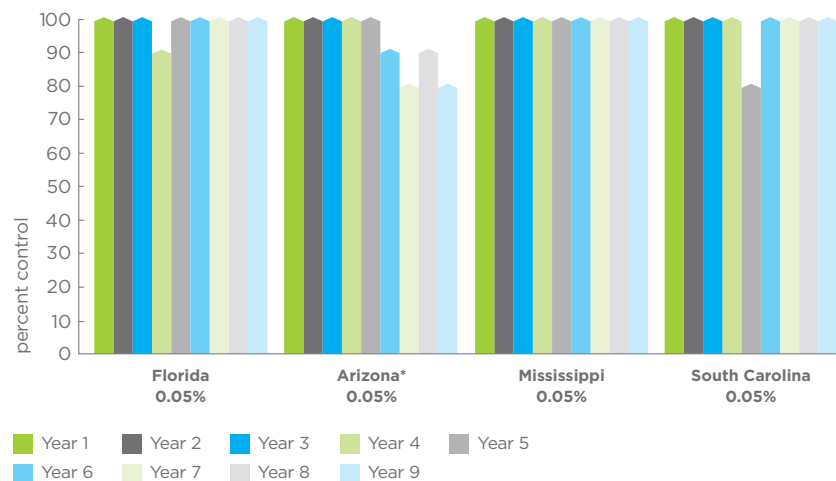
Feeding Cessation



In a laboratory test, arena eastern subterranean termites (*Reticulitermes flavipes*) were allowed to tunnel in treated sand (approximately 30 minutes) or treated soil (approximately 90 minutes), and then moved to an untreated arena with a cellulose food source. Evaluation of paper towel disks after 2-3 days revealed that the termites exposed to Altriset consumed no paper, while untreated termites consumed approximately 180 mm² of paper on average. Soils contained 20-97% sand and 1-5% organic matter.

Source: 2010 Stine-Haskell Research Center, PR106209

9-Year USDA-Forest Service Efficacy Test



*A lack of termite activity in untreated plots in Arizona prevent proper interpretation of data after Year 5.

In the USDA-Forest Service concrete slab test, Altriset has demonstrated excellent performance for 9 consecutive years at each test site. In Florida, the non-repellent and delayed action of Altriset was apparent in year 4, where a single plot was initially attacked, but then clean in subsequent years. The same effect is noted in year 5 in South Carolina. Notoriously, the most difficult site for a termiticide to be successful is in Mississippi, where Altriset has achieved 100% control for 9 straight years.

Source: USDA-Forest Service

A Package that is Simple to Use and Easy to Recycle

- ▶ Easily and accurately measure 8.5 oz to make 25 finished gallons
- ▶ Entire 34 oz container holds enough product to make 100 finished gallons
- ▶ Product container can be accepted for recycling through Ag Container Recycling Council (ACRC) sponsored program

Altriset Delivers the Results You Want

Through years of in-field research working alongside our customers, Syngenta Professional Pest Management understands the challenges faced by PMPs. By combining our scientific expertise and resources, Syngenta is able to offer innovative and effective solutions, like Altriset, to give you the results you want.

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To learn more about Altriset termiticide, please visit www.SyngentaPMP.com or call 1-866-SYNGENT(A) (796-4368).



ALTRISSET TERMITICIDE PROFILE

- ▶ Controls termite colonies within three months or less when used in accordance with the label
- ▶ Halts termite feeding within hours of exposure
- ▶ Proven long-lasting residual protection for up to nine years
- ▶ Non-repellent chemistry is indiscernible to termites
- ▶ 2011 Agro Awards winner for Best Innovation Non-Crop

For use by individuals/firms licensed or registered by the state to apply termiticide products.