Acelepryn® Turf Insecticide

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A single application of ACELEPRYN controls a wide variety of turf insect pests and entire pest complexes. ACELEPRYN is in a class of chemistry with a unique mode of action in the turf market. ACELEPRYN has a favourable environmental and toxicological profile with very low toxicity to most non-target animals (such as mammals, birds, fish and bees) and is exempt from poison scheduling and has no PPE (Personal Protective Equipment) requirements or re-entry restrictions.

Class of Chemistry

ACELEPRYN is the first turf product featuring an active ingredient from the anthranilic diamide class of chemistry.

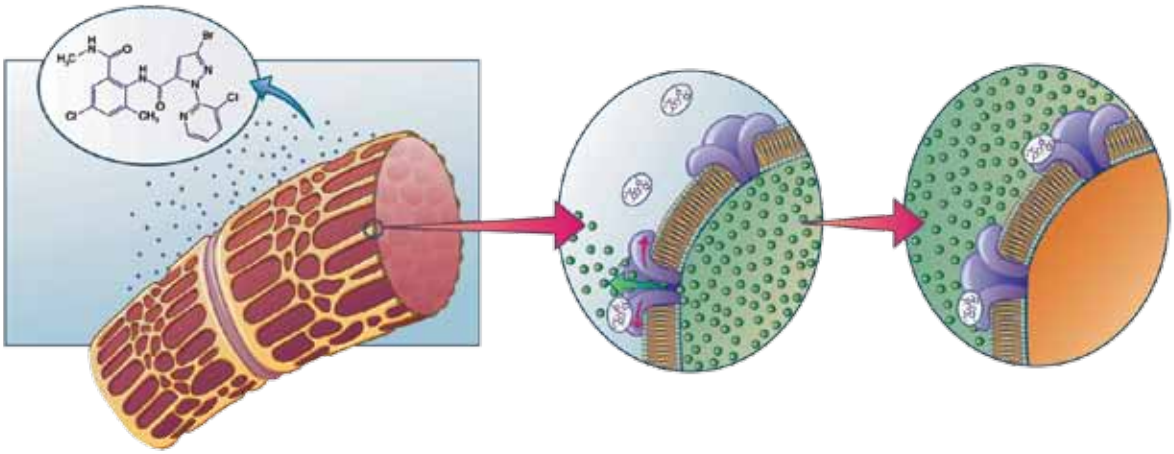
This class was inspired by research into the insecticidal properties of ryanodine – a natural substance found in the bark of trees and shrubs of the genus *Ryania*. Chlorantraniliprole, the active ingredient in ACELEPRYN is a synthetic compound that affects the ryanodine receptors in the insect muscle fibre.

These receptors regulate the flow of calcium into the cell cytoplasm to control muscle contraction.

ACELEPRYN binds to the ryanodine receptor and causes it to remain open, resulting in a depletion of calcium ions that disrupts muscle contraction. This leads to muscle paralysis and death.

The ryanodine receptors in the pests ACELEPRYN targets are 400 to 3,000 times more sensitive to anthranilic diamides than the receptors in mammals, minimising the impact on non-target species. This is one reason why ACELEPRYN has a favourable environmental and toxicological profile and is exempt from poison scheduling.

Unique Mode of Action



Phase 1 - Exposure

Insect comes in contact with or ingests Chlorantraniliprole, the active ingredient in ACELEPRYN insecticide.

Phase 2 - Activation

Chlorantraniliprole binds to and activates the ryanodine receptors located in the insect's muscle, and causes them to open.

Phase 3 - Paralysis

Calcium ions flow out of the open ryanodine receptors, depleting calcium needed for muscle contraction. Paralysis of the insect muscle leads to death.

Toxicological and Environmental Profile

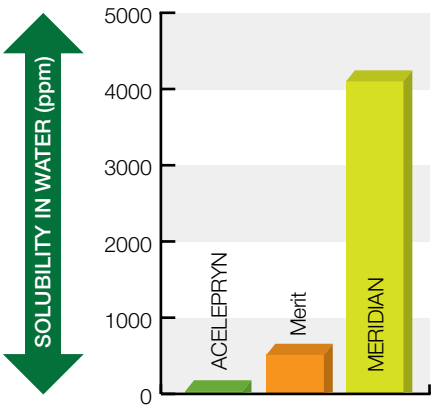
ACELEPRYN is setting new standards in user safety and was registered as being exempt from poison scheduling in Australia. There are no label requirements for personal protective equipment during application and no re-entry restrictions after application. All of which means you can use ACELEPRYN with confidence and reassure your customers.

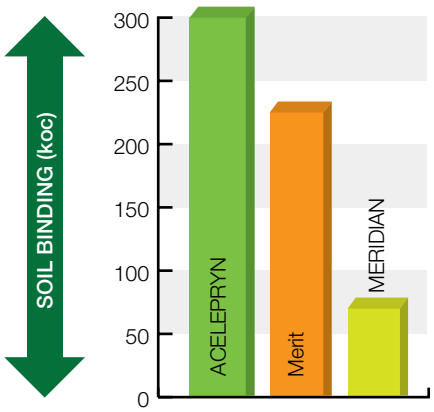
Toxicity Measure	Result (Chlorantraniliprole)
Acute oral and dermal	>5000 mg/kg
Skin irritant	No skin irritation
Eye irritant	No eye irritation
Sensitization	Not a skin sensitizer
Carcinogenicity	Not a carcinogen
Mutagenicity	Not a mutagen
Neurotoxicity	Not neurotoxic
Development and reproductive toxicity	No adverse events

Animal Group	Species	Acute Toxicity (Chlorantraniliprole)	Toxicity Classification
Mammal	Rat	LD_{50} > 5000 mg/kg	Low toxicity (exempt from scheduling)
Fish	Rainbow Trout	LC_{50} > 13.8 mg/L	Non-toxic at solubility limit
Bird	Bobwhite Quail	LD_{50} > 2250 mg/kg	Practically non-toxic (US EPA)
Bee	Honeybee	LD_{50} > 104 µg/bee	Practically non-toxic (US EPA)

Long Lasting Control

The binding of ACELEPRYN within the soil matrix, combined with low water solubility means it is likely to stay where it is and not move towards the surface or ground water.
The charts alongside show the lesser mobility of ACELEPRYN (Chlorantraniliprole).
The combination of low water solubility and higher soil binding properties give ACELEPRYN its long residual action and a very small environmental impact.





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For more information and to download the full registered label and MSDS, ask your Syngenta Agent or go to www.syngenta.com.au