

## METAREX<sup>®</sup>

ALL WEATHER SLUG AND SNAIL BAIT

### Getting the best from Metaldehyde-based snail and slug baits.

#### Myths busted

Metaldehyde is the active ingredient in most snail and slug baits, and has been in use in Australia for many years. Over this period myths and inaccuracies have surfaced around the efficacy of metaldehyde, most of which are the result of incorrect use rates, poor application and misunderstanding of the mode of action.

A major factor influencing the efficacy of metaldehyde is the poor formulation of some baits. These are typically made from cheap ingredients in a “dry” (compressed) process. Such inferior bran-based formulations are extremely susceptible to weathering which severely reduces their rainfastness and palatability (see Figure 1). Bran-based pellets break down rapidly in moist conditions, allowing leaching of the active ingredient, and loss of efficacy against slugs and snails.

This document sets the record straight on why metaldehyde is an effective compound to control snails and slugs, and outlines why Metarex is the best formulation to achieve and deliver results.



Figure 1 ~ Metarex bait (Row 5) showing superior weather resistance compared to ordinary baits when subject to 75mm of simulated rainfall.

#### Mode of Action

Metaldehyde (C<sub>8</sub>H<sub>16</sub>O<sub>4</sub>) is not a complicated chemical. In its base form, it is a white crystalline powder that does not dissolve in water. Metaldehyde acts mainly through ingestion, with symptoms caused by the irreversible destruction of mucous cells leading to death of snails and slugs, even under difficult conditions (rain and cold). The first visible symptom of metaldehyde poisoning is excessive production of mucus.

The very specific action of metaldehyde on the mucous cells provides a high level of safety to other fauna, earthworms and carabid ground beetles.

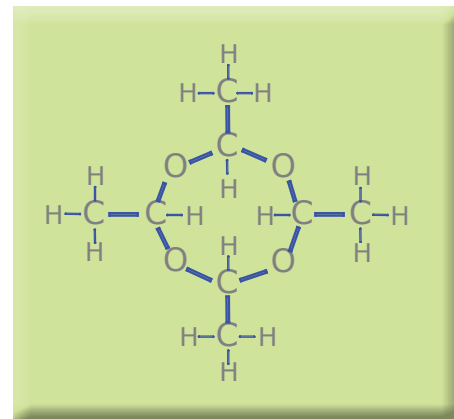


Figure 2 ~ Metaldehyde chemical structure

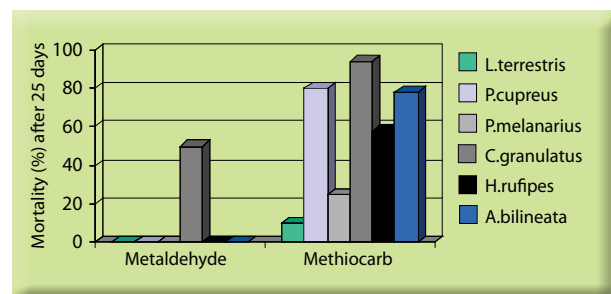


Figure 3 ~ Effects of Metaldehyde and Methiocarb on Carabid Beetles and Earthworms

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An obvious symptom of metaldehyde poisoning is dehydration, and there is a common misconception that snails and slugs may recover by taking on ambient water. This is a myth, with test results from Lonza (Triebkorn et al. 1998) proving that metaldehyde irreversibly destroys the mucus-producing membrane. This disables the snails & slugs means of locomotion, skin protection and digestion, and therefore makes it impossible for them to re-hydrate and recover.

There is also a misunderstanding about the efficacy of metaldehyde in wet conditions. Again, laboratory research has shown that metaldehyde mode of action is unaffected where excess water is introduced. No significant differences were recorded between wet and dry conditions (Mallet and Bougaran, 1971). This means that snails & slugs that have consumed a lethal dose of metaldehyde will not recover after heavy rainfall.

When snails and slugs consume a sub-lethal dose of any snail bait, they may not die and are still able to cause damage. This can happen with any active ingredient, and usually occurs when the bait itself is not attractive and palatable to the pests.

It has also been stated incorrectly that metaldehyde does not effectively control snails and slugs at low temperatures. Trials by Mallet and Bougaran have shown that metaldehyde works in temperatures as low as 2°C, well below those in which snails & slugs are usually active.

## Getting the best snail and slug control

The key to maximising control of snails and slugs and reducing crop damage is to ensure that the active ingredient is delivered where and when it is needed. Snails and slugs must receive a lethal dose from their first feed.

Metarex is manufactured using a “wet process”, and contains high-grade palatable durum wheat and other ingredients. The result is unequalled attractiveness to snails & slugs, yet excellent weathering properties.

Metarex has around three times the active strength of other baits currently available on the Australian market, and with one of the highest bait numbers per kilogram, allows excellent distribution in close proximity to the target pest. Robust, dust-free and weather-resistant, Metarex can be spread evenly by ground rig or drilling with the seed, as well as by air, and allows flexible management of pests with a high number of baits spread evenly across the ground. Applying Metarex maximises potential to deliver a lethal dose on either the snail or slug's first feed.

Metarex is a unique formulation that ensures rapid and efficient control of snails and slugs, even in cold and wet conditions.

Metarex has quickly become recognised as the leading metaldehyde-based bait in Australia, and delivers fast, cost-effective control of snails and slugs, even under the most challenging environmental conditions.



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