



**Australian Government**  
**Australian Pesticides and  
Veterinary Medicines Authority**



## **Methiocarb Final Regulatory Decision Report**

The reconsideration of the approvals of active constituent methiocarb, registration of products containing methiocarb, and approvals of associated labels

August 2019

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## FOREWORD

The Australian Pesticides and Veterinary Medicines Authority (APVMA) is an independent statutory authority with responsibility for the regulation of agricultural and veterinary chemicals in Australia. Its statutory powers are provided in the Agvet Codes scheduled to the *Agricultural and Veterinary Chemicals Code Act 1994*.

The APVMA has legislated powers to reconsider the approval of an active constituent, registration of a chemical product or approval of a label at any time after it has been registered. The reconsideration process is outlined in sections 29 to 34 of Part 2, Division 4 of the Agvet Codes.

A reconsideration may be initiated when new research or scientific evidence has raised concerns about the use or safety of a particular chemical, a product containing that chemical, or its label. The scope of each reconsideration can cover a range of areas including human health (toxicology, public health, work health and safety), the environment (environmental fate and ecotoxicology), residues and trade, chemistry, efficacy or target crop or animal safety. However, the scope of each reconsideration is determined on a case-by-case basis.

The reconsideration process includes a call for data from a variety of sources, a scientific evaluation of that data summarised in the proposed regulatory decision (PRD), and, following public consultation on the PRD, a final regulatory decision about the ongoing use of the chemical or product. The data required by the APVMA must be generated according to scientific principles. The APVMA conducts scientific and evidence-based risk analysis with respect to the matters of concern by analysing all the relevant information and data available.

In undertaking reconsiderations, the APVMA works in close cooperation with other regulators and state departments, as well as other expert advisers as appropriate.

This document sets out the final regulatory decisions (FRD) relating to the active constituent methiocarb and products containing methiocarb when used in accordance with current approved label instructions. The review findings and regulatory decisions are based on information collected from a variety of sources and comments received from public consultation.

This document, and the previously published proposed regulatory decisions report and supporting scientific assessments are available from the [APVMA website](#).

## EXECUTIVE SUMMARY

### Introduction

Methiocarb is a carbamate, non-systemic invertebrate pesticide that has been registered for use in Australia for over 30 years. In Australia, methiocarb is used for the control of snails and slugs in home gardens, and snails, slugs and false wireworm beetles in a range of agricultural crops. As of August 2019, there are two methiocarb active constituent approvals and two registered products containing methiocarb. Products are available only as bait (20 g/kg methiocarb) formulations that contain a bittering agent (denatonium).

The APVMA began its reconsideration of methiocarb in 1995 because of concerns over risk to public health, worker health and safety, possible risks to Australian trade and the environment and the poisoning of non-target animals (notably companion dogs).

### Reconsideration findings

As part of the methiocarb reconsideration, the APVMA assessed the toxicology, residues in food, risks to worker health and safety, risks to the environment, and risks from residues in food to public health and to Australian international trade of commodities on which methiocarb is used.

In 2005, as part of methiocarb review, the APVMA published the toxicology, occupational health and safety, environment, and residues and trade assessment reports along with the Preliminary Review Findings (PRF) Report<sup>1</sup>. The proposed review outcomes in 2005 included deleting all uses on food crops. Since then, the APVMA received submissions on the PRF and also new data.

Subsequently, the APVMA assessed all the submissions and the new data provided in response to the PRF report. The new data allowed the APVMA to re-examine a number of uses that were previously proposed for deletion, allowing these uses to be retained. In August 2018, the APVMA released the revised assessments, and proposed regulatory decisions<sup>2</sup> for a three-month public consultation.

Based on the consideration of the hazards associated with the active constituent and the products, the estimated exposure and risks associated with use, the APVMA found that both active constituent approvals (Table 1) can continue, provided that:

- a) they are used in one of the two currently approved products (Table 2), and
- b) the product labels are updated with the new representative label components shown in Appendix A.

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<sup>1</sup> [apvma.gov.au/node/14666](http://apvma.gov.au/node/14666)

<sup>2</sup> [apvma.gov.au/node/32341](http://apvma.gov.au/node/32341)

Table 1: Affirmed active constituent approvals

Approval number	Active constituent	Holder
44212	Methiocarb	Bayer Crop Science Pty Ltd
55824	Methiocarb	Bayer Crop Science Pty Ltd

Table 2: Affirmed methiocarb product registrations and cancelled label numbers

Product number (Column 1)	Product name (Column 2)	Holder (Column 3)	Cancelled label numbers <sup>1</sup> (Column 4)	New label approval number <sup>2</sup> (Column 5)
33274	Mesurool Snail and Slug Bait	Bayer Crop Science Pty Ltd	33274/1097 33274/0100 33274/0304 33274/1209	33274/to be determined
51851	Baysol Snail and Slug Bait	Bayer Crop Science Pty Ltd	51851/0599 51851/55632 51851/100882	51851/to be determined

<sup>1</sup> The product label numbers in column 4 of Table 2 must be varied in accordance with this decision and are, therefore, no longer currently approved. Products bearing these label numbers are subject to a 12-month period of permitted supply, possession, custody and use pursuant to subsections 45(b) and 81(3) of the Agvet Code.

<sup>2</sup> The new label number will be determined when the application to vary the label is submitted and approved.

## Regulatory decisions

Based on the findings outlined above, the APVMA has made the following regulatory decisions:

- **affirm** the active constituent approvals for methiocarb (shown in Table 1)
- **vary** the relevant particulars of the current registrations and label approvals of methiocarb products (as shown in Table 2, column 4) to amend the use patterns, to amend the restraint statements, to amend withholding periods and to amend the safety directions and first aid instructions (representative new label components are shown in Appendix A). These label approvals have been varied and are, therefore, no longer currently approved. They are subject to a 12-month period of permitted supply, possession, custody and use pursuant to subsections 45(b) and 81(3) of the Agvet Code
- **affirm** these product registrations and label approvals once the necessary particulars and conditions have been varied as described above (as shown in Table 2, column 5)
- **allow** a one-year phase-out period for the continued supply and use of registered products bearing the earlier (label approvals to be varied as shown in Table 2 column 4) approved labels. During this period, products may be continue to be used according to the earlier approved label instructions.

## **The APVMA review of methiocarb is concluded**

The APVMA has taken the necessary administrative and regulatory steps to give effect to the above decisions. These actions conclude the review of methiocarb product registrations and associated label approvals.

# 1 INTRODUCTION

Methiocarb is a carbamate pesticide of high acute toxicity that is used in both agricultural and home garden situations. The currently registered products are used to control snails and slugs in berry crops, cereals, gardens, nurseries, oilseed crops, orchards, pastures and vegetable crops, and as a control measure for false wireworm beetle in sunflowers. It can also be used to control snails, slugs, slaters and millipedes.

Methiocarb has been registered for use in Australia since the early 1980s. Its mode of action is through inhibition of the enzyme acetylcholinesterase, an enzyme in the nervous system. This inhibition results in the excessive stimulation of those parts of the nervous system that use acetylcholine to transmit nerve impulses.

## 1.1 APVMA reconsideration of methiocarb

Methiocarb was selected for review from the Priority Candidate Review List in 1994.

The APVMA began its review of the active constituent methiocarb, all products containing methiocarb and their associated labels in 1995. Methiocarb was nominated because of concerns over public health, occupational health and safety, exposure to methiocarb residues in food, and possible risks to Australian trade and the environment. These concerns included:

- lack of appropriate maximum residue limits (MRLs) for some agricultural uses (including cereal grains and oilseeds)
- residue detections in produce above MRLs (detected through the National Residue Survey)
- MRL inconsistencies with major trading partners (US, Canada, Codex), and
- potential risk to workers from exposure.

State agricultural departments also submitted reports of poisoning of non-target species by methiocarb products, which highlighted specific concerns around accidental poisoning in domestic dogs.

The scope of the reconsideration included the following aspects of active constituent approvals, product registrations and label approvals for methiocarb:

- toxicology
- occupational health and safety
- residues and trade, and
- environment.

The basis for the reconsideration of the registration and approvals for methiocarb is whether the APVMA is satisfied that the safety and trade criteria listed in sections 5A and 5C of the *Agricultural and Veterinary Chemicals Code Act 1994* (Agvet Code) for continued registration and approval are being met. These requirements are that the use of the product, in accordance with instructions approved, or to be approved, by the APVMA for the product or contained in an established standard:

- would not be an undue hazard to the safety of people exposed to it during its handling or people using anything containing its residues
- would not be likely to have an effect that is harmful to human beings
- would not be likely to have an unintended effect that is harmful to animals, plants or things or to the environment, and
- would not unduly prejudice trade or commerce between Australia and places outside Australia.

The APVMA also considered whether labels for containers for chemical products containing methiocarb meet the labelling criteria as defined in section 5D of the Agvet Code, which requires that labels have adequate instructions relating to:

- the circumstances in which the product should be used
- how the product should be used
- the times when the product should be used
- the frequency of the use of the product
- the re-entry period after use of the product
- the withholding period after the use of the product
- disposal of the product and its container
- safe handling of the product and first aid in the event of an accident
- any matters prescribed by the regulations

## 2 SUMMARY OF ASSESSMENTS AND FINDINGS

### 2.1 Toxicology

#### Toxicology assessment

Methiocarb has high acute oral toxicity and low dermal toxicity. The Median Lethal Dose (LD<sub>50</sub>) for methiocarb is 9–135 mg/kg bw in rats and the dermal LD<sub>50</sub> was determined to be in excess of 2000 mg/kg in rat studies. It is not an eye irritant, not a skin irritant and not a skin sensitiser. In repeat dose studies in rats, dogs and rabbits, dose-related inhibition of blood cholinesterases (plasma and erythrocyte) and brain cholinesterase activities were generally the most sensitive methiocarb associated effects. Consistent with accepted practice the toxicology assessment has used the inhibition of blood cholinesterases as health-protective biomarkers for the key methiocarb-induced adverse effect of inhibition of acetylcholinesterase within the nervous system.

Methiocarb is not genotoxic or carcinogenic.

#### Approval status

The toxicology assessment concluded that there are no objections on toxicological grounds to the ongoing approval of the active constituent methiocarb.

#### Acceptable Daily Intake (ADI)

The Acceptable Daily Intake (ADI) for humans is the level of intake of a chemical that can be ingested (including by sensitive sub-population) daily over an entire lifetime without appreciable increased risk to health. It is established by dividing the overall NOAEL (No Observed Adverse Effect Level) for the most sensitive, relevant effect from a suitable study by an appropriate uncertainty factor. The uncertainty factor accounts for any uncertainties associated with extrapolation of animal data to humans and intraspecies variation across the human population.

The current ADI for methiocarb is 0.002 mg/kg bw/d. This was derived by applying a 100-fold safety factor to a NOAEL of 0.2 mg/kg bw/d (5 ppm). The NOAEL is based on inhibition of plasma cholinesterase and reduced food consumption observed in a 2-year dietary dog study at the next highest dose tested (60 ppm).

No change to the current Australian ADI is required, as this review has not identified any other study that is more suitable for setting the pivotal NOAEL, and it is considered that the decreased plasma cholinesterase and reduced feed intake are appropriate toxicological endpoints on which to base the NOAEL. The 100-fold safety factor is considered appropriate and does not require revision.

#### Acute Reference Dose (ARfD)

The Acute Reference Dose (ARfD) is the estimate of the amount of a substance in food or drinking water, expressed on a milligram per kilogram body weight basis, that can be ingested over a short period of time, usually one meal or one day, or a single instance without appreciable health risk to the consumer on the basis of all known facts at the time of the evaluation.

The APVMA has revised the Australian ARfD for methiocarb from 0.03 mg/kg bw/d to 0.005 mg/kg bw/d (4 December 2017), based on a NOAEL of 0.5 mg/kg bw/d for clinical signs (muscle fasciculation) in dams in a rat developmental study, with a 100-fold safety factor.

## Poisons Schedule

The toxicology assessment recommended that methiocarb (for pelleted/bait preparations containing 2 per cent or less of methiocarb) remain in Schedule 5 of the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

## First aid instructions

The toxicology assessment recommend that the first aid instructions for methiocarb products be amended as specified in Table 3. On the basis of the estimated acute toxicity, the current first aid instruction 'm' is not appropriate for the bait products. These pelleted preparations, containing 2 per cent or less of methiocarb, are in Schedule 5 of the SUSMP due to their low acute toxicity profile. Therefore, the following first aid instruction for methiocarb products is recommended:

Table 3: Recommended first aid instructions for methiocarb products

Methiocarb	Codes	Text
≤2%	a	If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131 126, New Zealand 0800 764 766.

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## 2.2 Worker Health and Safety (WHS)

### Findings of the WHS assessments

The occupational risk assessment takes into consideration the hazard of the chemical as determined by toxicology, its use pattern in Australia and worker exposure for each exposure situation.

The occupational risk during loading, application and post-application is evaluated using a Margin of Exposure (MOE) approach, where estimated occupational exposures are compared to a toxicological threshold (the No-Observed-Adverse-Effect-Level (NOAEL)) for the most sensitive adverse effect relevant to humans. Typically a MOE of 100 is considered an adequate margin of safety based on non-cancer effects in laboratory animals.

Based on the outcomes of the risk assessment, risk mitigation measures are then recommended to reduce human exposures to an acceptable level. Those measures may include engineering controls, safety directions (including for personal protective equipment), use restraints, re-entry intervals and scheduling recommendations.

The adverse effects of methiocarb exposure are associated with the inhibition of neuronal cholinesterase activity. These effects are dose-related. To estimate methiocarb risks associated with product mixing, loading and application as well as re-entry into treated areas, short-term studies were considered the most appropriate, as most exposures are expected to be infrequent (one to two applications per year) with applications being made on a small number of consecutive days.

A number of repeat dose animal studies were considered suitable to establish NOAELs relevant for an occupational health and safety (OHS) risk assessment. Based on a consideration of the likely duration and routes of worker exposure (i.e. dermal and inhalation), the OHS risk assessment used NOAELs derived from a three-week dermal study and a three-week inhalational study in rabbits and rats respectively. The methiocarb risk assessment relied on animal data only, therefore a MOE of 100 or more is considered acceptable.

The NOAEL, based on cholinesterase inhibition and decreased food consumption and weight gain, was 60 mg/kg bw/d for dermal exposure whereas for inhalational exposure, with the same toxicological endpoint, the NOAEL was 6 mg/m<sup>3</sup> (extrapolated to a systemic exposure of 1.6 mg/kg bw/d).

## Safety directions

The following changes to safety directions are recommended.

### *Safety directions to be deleted*

There are no registered products with formulations containing methiocarb SC 500 g/kg or less and WP 750 g/kg or less, so the safety direction entries for these formulations should be deleted from the FAISD Handbook—*Handbook of First Aid Instructions, Safety Directions, Warning Statements and General Safety Precautions for Agricultural and Veterinary Chemicals*.

### *Safety directions for current methiocarb products*

**Table 4: Recommended safety directions for currently registered methiocarb products**

Codes	Text
<b>Product type: Bait (BA) 20g/kg or less (&gt;1 kg pack size)</b>	
129 133 160 162 210 211 250 252 310 290 306 (dust) 289 290 294c 350 360 361	Product is harmful if swallowed. May irritate the eyes. Avoid contact with eyes and skin. Do not touch baits. If on skin and after each baiting, wash thoroughly with soap and water. If dust is present wear disposable dust face mask covering mouth and nose. If applying by hand, wear elbow length chemical resistant gloves. After use and before eating drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves.
<b>Product type: BA HG (home garden) 20g/kg or less (1kg pack or less)</b>	
129 133 160 162 210 211 250 277 279 290 321 310 290 306 (dust) 252 351	Product is harmful if swallowed. May irritate the eyes. Avoid contact with eyes and skin. Do not touch baits. If on skin and after each baiting, wash thoroughly with soap and water. If dust is present wear disposable dust face mask covering mouth and nose. If applying by hand, wear elbow length chemical resistant gloves. After use and before eating drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves.

## 2.3 Residues, dietary risk assessment and trade

### Dietary risk assessment

#### *Chronic dietary exposure*

The chronic dietary exposure to methiocarb is estimated by the National Estimated Daily Intake (NEDI) calculation encompassing all registered and temporary uses of the chemical and the mean daily dietary consumption data derived primarily from the 2011–12 National Health and Physical Activity Survey. The NEDI calculation is made in accordance with WHO Guidelines<sup>3</sup> and is a conservative estimate of dietary exposure to chemical residues in food. The NEDI for methiocarb is equivalent to <40 per cent of the ADI.

It is concluded that the chronic dietary exposure of methiocarb at these levels is acceptable. It is noted that the exposure estimates were conservative as values at the Limit of Quantitation (LOQ) were included in the calculation, and residues are not expected in commodities in which LOQ MRLs have been recommended.

#### *Acute dietary exposure assessment*

The acute dietary exposure is estimated by the National Estimated Short Term Intake (NESTI) calculation. The NESTI calculations are made in accordance with the deterministic method used by the JMPR with 97.5<sup>th</sup> percentile food consumption data derived primarily from the 2011–12 National Health Survey. NESTI calculations are conservative estimates of short-term exposure to chemical residues in food.

With the exclusion of the leafy vegetable crop group (except head lettuce), the acute exposures for the uses of methiocarb supported by residues data are acceptable. The continued use on the leafy vegetable crop group (except head lettuce) will not be supported.

### Residue related aspects of trade

Citrus fruit, grapes (including dried grapes and wine) and animal commodities are considered to be major trade commodities. Finite residues of methiocarb are not expected in citrus, grapes or animal commodities, and MRLs at the LOQ are recommended. The use of methiocarb as per the label instructions is therefore unlikely to pose an undue risk to trade.

### Supported uses of methiocarb

In support of this reconsideration, the holder (Bayer Crop Science Pty Ltd) has provided a number of trials for a variety of commodities conducted in Australia and Europe, which have been used for the residues assessment. Data considered in the 2005 PRF and data that have been submitted since the PRF were considered. The following use patterns are acceptable from a residues perspective:

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<sup>3</sup> WHO (2008). *Consultations and workshops: Dietary Exposure Assessment of Chemicals in Food: Report of a joint FAO/WHO Consultation*, Annapolis, Maryland, USA, 2–6 May 2005.

Table 5: Supported uses of methiocarb based on the residues assessment

Crop	Pest	Rate
Citrus, grapes strawberries, pome fruit, stone fruit and ornamentals	Common garden snail, slugs	5.5 kg/ha (110 g ai/ha) or 11–22 kg/ha
	White Italian snail, white snail	(220–440 g ai/ha)
Cereals and oil seeds (pre-emergent only), pastures	Common garden snail, slugs	5.5 kg/ha (110 g ai/ha) Or 11–22 kg/ha
	White Italian snail, white snail	(220–440 g ai/ha)
Artichoke, brassica vegetables, head lettuce, and potato	Common garden snail, slugs	5.5 kg/ha (110 g ai/ha)
	White Italian snail, white snail	
Sunflowers	False wireworm beetle	2.5 kg/ha (50 g ai/ha) (10 pellets/m <sup>2</sup> )
Non-crop areas and perimeter treatment	Common garden snail, slugs	5.5 kg/ha (110 g ai/ha)
Gardens	Snails, slugs, slaters, millipedes	100 pellets/m <sup>2</sup> (500 g ai/ha equivalence)

## Summary of the assessment recommendations

No amendments are required to the home garden product *Baysol Snail and Slug Bait* based on the residues assessment, as this product is not approved for use on food-producing crops. However in order to meet the safety criteria as defined by section 5A of the Agvet Code the *Mesurool Snail and Slug Bait* label must be varied in accordance with the new representative label components shown in Appendix A.

## MRL recommendations

Based on the residues evaluation it is the following changes are required to the MRL Standard and are recommended for implementation once any periods for the legal use of previous versions of varied have ended:

**Table 6: Changes to maximum residue limits for methiocarb in food commodities as listed in Table 1, Table 4 and Table 5 of the MRL Standard**

Compound	Food	MRL (mg/kg)	
<b>Table 1</b>			
<b>Methiocarb</b>			
<b>DELETE:</b>			
FC	0001	Citrus fruits	0.1
		Fruits (except citrus fruits; grapes)	T0.1
FB	0269	Grapes	0.5
		Vegetables	0.1
		Wine	0.1
<b>ADD:</b>			
VS	0620	Artichoke, globe	*0.06
FB	0018	Berries and other small fruits	*0.06
VB	0040	Brassica (cole or cabbage) vegetables, head cabbages, flowerhead brassica	0.1
GC	0080	Cereal grains	*0.06
FC	0001	Citrus fruits	*0.06
MO	0105	Edible offal (mammalian)	*0.05
PE	0112	Eggs	*0.05
VL	0482	Lettuce, head	0.2
MM	0095	Meat (mammalian)	*0.05

Compound	Food	MRL (mg/kg)
ML 0106	Milks	*0.005
SO 0088	Oilseeds	*0.06
FP 0009	Pome fruits	*0.06
VR 0589	Potato	*0.06
PO 0111	Poultry, edible offal of	*0.05
PM 0110	Poultry meat	*0.05
FS 0012	Stone fruits	*0.06

Compound	Animal feed commodity	MRL (mg/kg)
<b>Table 4</b>		
<b>Methiocarb</b>		
<b>ADD:</b>		
	Primary feed commodities	1

Substance	Use
<b>Table 5</b>	
<b>Methiocarb</b>	
<b>DELETE:</b>	<ul style="list-style-type: none"> <li>in baits for the control of garden pests</li> <li>{T} in baits for the control of gardens pests on herbs, lemon balm, lemon grass, kaffir lime leaves, lemon verbena and tumeric.</li> </ul>
<b>ADD:</b>	<ul style="list-style-type: none"> <li>for use in baits applied outside the perimeter of areas planted with food crops or to non-crop areas.</li> </ul>

\*: The MRL is set at or near the limit of analytical quantification. {T}: The MRL, residues definition or use is temporary.

## 2.4 Environment

### Mesuroil Snail and Slug Bait

New data showed residues in earthworms following field use of representative formulations. A revised assessment of secondary poisoning potential to Australian birds indicated a high risk from this exposure route. However, evidence provided in additional field tests in a wide range of cropping situations treated with methiocarb pellets demonstrated that, in practice, birds are unlikely to be exposed to lethal or sub-lethal doses.

Additional toxicity data for methiocarb and metabolites to soil organisms necessitated an update to the soil organism risk assessment. It was demonstrated that the risk from methiocarb metabolites was no greater than that from the parent compound and the overall risk to soil organisms was considered acceptable.

The additional data provided has resulted in a lower aquatic end-point than previously applied and resulted in a re-assessment of runoff. Highest risks were associated with the use in vegetables. Based on the maximum application rate (22 kg product/ha), risks from dryland cropping use were considered acceptable, having regard to the legislative criteria.

In many cases, rate restrictions in summer months are proposed in the southern states of Victoria, South Australia and Tasmania. It appears counter intuitive that, as these are the driest months, the risks from runoff are expected to be lower. Given the lower probability of actual rainfall occurring in southern states during the summer months, the following statement is included in lieu of the rate restrictions for Victoria, Tasmania and South Australia:

**DO NOT** apply in Victoria, Tasmania and South Australia in summer if rainfall forecast is more than 10 mm per day for the next 48 hours.

The following table summarises the outcomes of the runoff assessment in terms of identified risks for different uses and the associated risk management options that would allow the risk to be considered acceptable.

**Table 7: Risk management recommendations for runoff risk**

Use situation	State/region	Risk management recommendations
Pasture	Vic., Tas.	DO NOT apply more than 11 kg/ha in summer
Orchards	Vic., Tas., SA	DO NOT apply to orchards with bare soil inter-rows
	Northern Gulf	DO NOT apply more than 11 kg/ha in the Northern Gulf in November.
	Fitzroy	DO NOT apply more than 11 kg/ha in the Fitzroy catchment.
	SE Queensland	DO NOT apply more than 11 kg/ha in the South East Qld catchments.
Vegetables	Vic.	DO NOT apply more than 11 kg/ha in summer
	Tas.	DO NOT apply more than 11 kg/ha in spring
		DO NOT apply more than 5.5 kg/ha in autumn
		DO NOT apply in Tasmania in summer
	SA, WA	DO NOT apply more than 11 kg/ha in summer
	Cape York	DO NOT apply more than 11 kg/ha in November
	Northern Gulf	DO NOT apply more than 11 kg/ha in October
DO NOT apply more than 5.5 kg/ha in November		
Mackay/Whitsunday	DO NOT apply more than 11 kg/ha in October and November	

Use situation	State/region	Risk management recommendations
	SE Queensland	DO NOT apply more than 11 kg/ha in the South East QLD catchments.

Additionally, the label for Mesurool Snail and Slug Bait contains the following instruction aimed at minimising harmful effects to birds and mammals: “After filling the applicator, clean up spilled pellets so that they are not eaten by birds and other animals.” It is recommended that this instruction be varied to include the word immediately as the longer the spilled pellets remain available, the greater the risk of being eaten by non-target species, with concomitant poisoning. Birds are also a subgroup of the broader term “animal.” Furthermore it does not matter if the baits were spilled as part of filling an applicator or if they were spilled due to some other activity. The critical factor is that any spilled baits should be cleaned up immediately so that they are not consumed by non-target species. Accordingly the revised statement would read:

“CLEAN UP SPILLED BAITS IMMEDIATELY so that they are not eaten by birds and other animals.”

### **Baysol Snail and Slug Bait**

The same instruction aimed at minimising harmful effects to non-target species appears on the label of the home garden product Baysol. Based on the reasons described above the statement should be revised to:

“CLEAN UP SPILLED BAITS IMMEDIATELY so that they are not eaten by birds and other animals.”

### ***Companion Animals***

The misuse of methiocarb containing bait products is a potential cause of accidental poisoning in companion animals, particularly dogs. The approved new labels for both Baysol and Mesurool include substantially increased warnings and requirement in multiple different label elements (See Appendix A).

### 3 PUBLIC CONSULTATION ON PROPOSED REGULATORY DECISION

After consideration of the hazards, estimated exposure and likely risks associated with use of the products, in 2018 the APVMA published the Proposed Review Decisions report (PRD)<sup>4</sup> and invited stakeholder comments.

In the PRD, the APVMA proposed that all product registrations could be affirmed once variations to product labels have been made.

The APVMA received three submissions on the proposed review decisions—one from the registration holder Bayer Crop Science Pty Ltd, one from Grain Producers Australia and one from the Senior Entomologist of Department of Primary Industries and Regional Development of Western Australia (DPIRD WA).

#### 3.1 Bayer Crop Science Pty Ltd submission

Methiocarb is not a systemic insecticide. Hence residues in food are possible by contact only.

Support the use of cereal, oilseed and pasture uses at 440 g ai/ha rate (as on the previous label).

A single pellet contains on average 0.8 mg of methiocarb. A significant number of pellets would need to be captured with the harvested commodity to produce a quantifiable residue.

Therefore, the full application rate of 11–22 kg product/ha should be allowed to continue.

Expand fruit uses. The fruit crops of pome fruit, stone fruit, citrus, berries and other small fruit be considered (in place of previous orchard claim).

Expand vegetable crops in which methiocarb can be used.

Non-cropping areas and perimeter (outside of crop) band treatment for field, fruit and vegetable crops should be allowed and included as a specific statement on the label. Since the crop claims are going to be more defined on the new label, it will remove confusion if this is now listed on the new label.

#### APVMA consideration

The APVMA agrees that use at 440 g ai/ha can be supported for cereals, oilseed and pasture on the basis that the product is not systemic.

The APVMA agrees to provide clarity by including specific fruit crops and orchards on the label. The APVMA cannot support the expansion of vegetable crops on which methiocarb can be used. Insufficient residue data is available to consider such expansion and the available data demonstrates that finite residues can occur in some vegetable crops. Further extrapolation is not supported.

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<sup>4</sup> [apvma.gov.au/node/32341](http://apvma.gov.au/node/32341)

The APVMA agrees that the risk for non-crop and perimeter band treatment is low. Further, it is a sound practice to control relevant pests with minimal use of methiocarb. On that basis, the APVMA agrees to include non-crop and perimeter treatment on the label.

### **3.2 Grain Producers Australia submission**

Grain Producers Australia also asked APVMA to allow the use of methiocarb at 440 g ai/ha on the basis that the chemical is not systemic.

#### **APVMA consideration**

The APVMA agrees.

### **3.3 Senior Entomologist DPIRD WA submission**

The submission suggested that there are inconsistencies in the wording in the PRD. For example, grapes seem to be defined as being different to grapevines, and the use of words strawberries and berries on the label does not have clarity. The submission also asked for clarification on if methiocarb would not be allowed in pome and stone fruit orchards, and if grazing would be allowed in treated orchards.

#### **APVMA consideration**

The APVMA has removed the inconsistencies in the wording by inserting more specific words to describe crops on the labels. It has also added stone and pome fruit on the labels thereby providing clarity that the product can be used in those orchards. Similarly, the APVMA has also amended the instruction relating to grazing and withholding periods with clearer instructions.

## 4 REGULATORY DECISIONS

Based on the risk assessments described in Section 2 and consideration of submissions, the APVMA has made the following decisions with respect to the methiocarb active constituent approvals, product registrations and their associated label approvals.

### 4.1 Affirm approvals of the active constituent methiocarb

The APVMA decided, under s34(1)(a) of the Agvet Code, that it is SATISFIED that the active constituent methiocarb meets the safety criteria. That is, if the use of the constituent, in accordance with any instructions approved by the APVMA for the constituent or contained in an established standard, is not, or would not be:

- an undue hazard to the safety of people exposed to it during its handling or people using anything containing its residues, and
- likely to have an effect that is harmful to human beings, and
- likely to have an unintended effect that is harmful to animals, plants and things or to the environment.

Accordingly, the APVMA AFFIRMED the approval of the active constituents listed in Table 1 (above).

### 4.2 Vary particulars of product registrations and label approvals and affirm product registrations with varied labels

The APVMA decided, under s34(1) of the Agvet Code, that it is NOT SATISFIED that the products listed in Table 2 columns 4 and 5 (above) meet the safety criteria and/or the trade criteria and/or the labelling criteria as defined in sections 5A, 5C and 5D of the Agvet Code.

However the APVMA also decided, under s34A of the Agvet Code, that the relevant particulars or conditions of the registration (or approval) can be varied in such a way (representative new label components shown in Appendix A) to allow the registration or approval to be affirmed.

Therefore the APVMA VARIED the registration and current label approval for these products (Column 4 of Table 2) assigning new label approval numbers as listed in Column 5 of Table 2 (above). Since the label approvals shown in Column 4 of Table 2 have been varied they are no longer currently approved. They are subject to a 12 month period of permitted supply, possession, custody and use pursuant s 45(b) and 81(3) of the Agvet Code as described below.

### 4.3 Phase-out period

The APVMA determined under s81(3)(b), s45A, and s45B of the Agvet Code that a one-year phase-out period shall apply for the continued supply, possession, and custody of registered products bearing the earlier approved labels (Column 4 of Table 2, above). During this time, products may continue to be used according to the earlier approved label instructions. After that period all product that is supplied must bear the varied approved label (Column 5 of Table 2).

## 5 AMENDMENTS TO STANDARDS

### 5.1 Health-based guidance values

#### Acceptable daily intake (ADI)

The current ADI for methiocarb of 0.002 mg/kg bw/day is acceptable and no amendments are required.

#### Acute reference dose (ARfD)

The ARfD has been amended from 0.03 mg/kg bw/d to 0.005 mg/kg bw/d.

#### Poisons schedule

There are no changes required to the current Schedule 5 listing for methiocarb products.

#### First-aid instructions

The APVMA amended first-aid instructions in methiocarb product labels to the following:

**Table 8: Amended first-aid instructions**

Methiocarb	Codes	Text
≤2%	a	If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131 126, New Zealand 0800 764 766.

#### Safety directions including

The APVMA amended safety directions in methiocarb product labels to include the following directions:

**Table 9: Amended safety directions**

Codes	Text
<b>Product type: BA 20g/kg or less (&gt;1 kg pack size)</b>	
129 133 160 162 210 211 250 252 310 290 306 (dust) 289 290 294c 350 360 361	Product is harmful if swallowed. May irritate the eyes. Avoid contact with eyes and skin. Do not touch baits. If on skin and after each baiting, wash thoroughly with soap and water. If dust is present wear disposable dust face mask covering mouth and nose. If applying by hand, wear elbow length chemical resistant gloves. After use and before eating drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves.

Codes	Text
<hr/> <b>Product type: BA HG 20g/kg or less (1kg pack or less)</b> <hr/>	
129 133 160 162 210 211 250 277 279 290 321 310 290 306 (dust) 252 351	Product is harmful if swallowed. May irritate the eyes. Avoid contact with eyes and skin. Do not touch baits. If on skin and after each baiting, wash thoroughly with soap and water. If dust is present wear disposable dust face mask covering mouth and nose. If applying by hand, wear elbow length chemical resistant gloves. After use and before eating drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves.

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### *Delete entries*

The safety directions instructions for methiocarb products containing SC 500 g/kg or less and WP 750 g/kg or less are to be deleted from FAISD Handbook as there are no registered products of this type.

## **5.2 MRL Standards**

Changes to the MRL Standard presented in Section 2.3, Table 6 are recommended for implementation once any periods for the legal use of previous versions of varied labels have ended.



## Appendix

## APPENDIX A: REPRESENTATIVE LABEL COMPONENTS

APVMA Approval Number: 33274/to be determined

These representative label components are presented in the e-label format.

<b>Label name:</b>	MESUROL SNAIL AND SLUG BAIT			
<b>Signal headings:</b>	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING			
<b>Constituent statements:</b>	ACTIVE CONSTITUENT: 20 g/kg METHIOCARB (an anticholinesterase compound) CONTAINS BITREX™			
<b>Mode of action:</b>	Group	<b>1A</b>	Molluscicide, Insecticide	
<b>Statement of claims:</b>	For control of snails and slugs in berry crops, cereals, gardens, nurseries, oilseed crops, orchards, pastures and vegetable crops and for false wireworm beetle on sunflowers.			
<b>Net contents:</b>	10 kg 150 kg			
<b>Restraints:</b>	<p><b>DO NOT</b> heap baits.</p> <p><b>DO NOT</b> apply directly onto edible plants or to crops where baits may be collected with harvested commodities.</p> <p><b>DO NOT</b> apply to cereal or oilseed crops after crop emergence.</p> <p><b>DO NOT</b> allow pets to access bait, box or bag – lock all in a safe place</p> <p><b>DO NOT</b> graze or cut treated areas for stock food for 28 days after application.</p> <p><b>DO NOT</b> treat areas on which poultry or pigs graze.</p> <p><b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers.</p> <p><b>DO NOT</b> use in areas where vulnerable, threatened, endangered or critically endangered mammals are known to occur. Toxic to birds and wild mammals. Clean up spilled baits immediately so that they are not eaten by birds or wild mammals.</p>			
<b>Directions for use:</b>	<b>CROP/SITUATION</b>	<b>PEST</b>	<b>RATE</b>	<b>CRITICAL COMMENTS</b>
	Citrus, Grapes Strawberries, Pome fruit, Stone fruit and Ornamentals	Common garden snail, slugs	5.5 kg/ha (110 g ai/ha)  or  11-22 kg/ha (220-440 g ai/ha)	<p><b>KEEP DOGS AWAY FROM TREATED AREAS.</b> Dogs find these baits attractive and it may kill them if eaten.</p> <p><b>KEEP AWAY</b> from domestic pets.</p> <p>For most infestations, apply low rate. For heavy infestations or where pasture is tall or dense apply higher rate. Scatter baits evenly onto ground where snails or slugs occur.</p> <p><b>DO NOT HEAP BAITS.</b></p> <p><b>DO NOT</b> treat areas on which poultry or pigs graze.</p> <p>Equipment such as fertiliser spinners, combines or sod seeders are satisfactory for spreading the baits and can easily be calibrated to apply 5.5 kg/ha. Gloves should be worn when baits are spread by hand.</p>
		White Italian snail, white snail		
	Cereals and oil seeds (pre-emergent only), Pastures	Common garden snail, slugs	5.5 kg/ha (110 g ai/ha)  or  11-22 kg/ha (220-440 g ai/ha)	<p><b>KEEP DOGS AWAY FROM TREATED AREAS.</b> Dogs find these baits attractive and it may kill them if eaten.</p> <p>Scatter baits evenly onto ground where snails or slugs occur.</p> <p><b>DO NOT HEAP BAITS.</b></p> <p><b>KEEP AWAY</b> from domestic pets.</p> <p><b>DO NOT</b> treat areas on which poultry or pigs graze.</p> <p>Equipment such as fertiliser spinners, combines or sod seeders are satisfactory for spreading the baits and can easily be calibrated to apply 5.5 kg/ha.</p>
		White Italian snail, white snail		

				<p>Gloves should be worn when baits are spread by hand.</p> <p><b>DO NOT</b> apply in Tasmania in summer.</p> <p>Cereals and Oilseeds: <b>DO NOT</b> apply after crop emergence.</p>
	Artichoke, Brassica vegetables, Head lettuce, and Potato	Common garden snail, slugs	5.5 kg/ha (110 g ai/ha)	<p><b>KEEP DOGS AWAY FROM TREATED AREAS.</b> Dogs find these baits attractive and it may kill them if eaten.</p> <p>Scatter baits evenly onto ground where snails or slugs occur.</p> <p><b>DO NOT</b> HEAP BAITS.</p> <p><b>KEEP AWAY</b> from domestic pets.</p> <p><b>DO NOT</b> treat areas on which poultry or pigs graze.</p> <p>Equipment such as fertiliser spinners, combines or sod seeders are satisfactory for spreading the baits and can easily be calibrated to apply 5.5 kg/ha.</p> <p>Gloves should be worn when baits are spread by hand.</p> <p><b>DO NOT</b> apply in Tasmania in summer.</p>
		White Italian snail, white snail		
	Sunflowers	False wireworm beetle	2.5 kg/ha (50 g ai/ha) (10 baits/m <sup>2</sup> )	<p><b>KEEP DOGS AWAY FROM TREATED AREAS.</b> Dogs find these baits attractive and it may kill them if eaten.</p> <p><b>KEEP AWAY</b> from domestic pets.</p> <p>Apply Mesurol 1-3 days after sowing.</p> <p>Scatter baits evenly onto ground where false wireworm beetles occur.</p> <p><b>DO NOT</b> HEAP BAITS.</p> <p><b>DO NOT</b> treat areas on which poultry or pigs graze.</p>
	Non-crop areas and perimeter treatment	Common garden snail, slugs	5.5 kg/ha (110 g ai/ha)	<p><b>KEEP DOGS AWAY FROM TREATED AREAS.</b> Dogs find these baits attractive and it may kill them if eaten.</p> <p><b>KEEP AWAY</b> from domestic pets.</p> <p>Scatter baits evenly onto ground where snails or slugs occur in uncropped areas or as a band between uncropped areas where slugs and snails may harbor and cropped areas, leaving at least 1 m distance between treatment band and cropped areas. Ensure that baits do not enter the cropped areas, except for those crops included specifically on this label.</p> <p>Apply using equipment that can accurately place baits where required, ensuring at least 1 m separation between treatment areas and crops not specifically mentioned on this label.</p> <p>Gloves should be worn when baits are spread by hand.</p> <p><b>DO NOT</b> apply within the planted area.</p> <p><b>DO NOT</b> HEAP BAITS.</p> <p><b>DO NOT</b> treat areas on which poultry or pigs graze.</p>
<b>Other limitations:</b>	<p><b>Management of Runoff Risk</b></p> <p><b>DO NOT</b> apply in Victoria, Tasmania and South Australia in summer if rainfall forecast is more than 10 mm per day for the next 48 hours.</p>			

	USE SITUATION	STATE/REGION	RISK MANAGEMENT RECOMMENDATIONS
	Pasture	VIC, TAS	<b>DO NOT</b> apply more than 11 kg/ha in summer
	Orchards	VIC, TAS, SA	<b>DO NOT</b> apply to orchards with bare soil inter-rows
		Northern Gulf	<b>DO NOT</b> apply more than 11 kg/ha in the Northern Gulf in November.
		Fitzroy	<b>DO NOT</b> apply more than 11 kg/ha in the Fitzroy catchment.
		SE Queensland	<b>DO NOT</b> apply more than 11 kg/ha in the South East QLD catchments.
	Vegetables	VIC	<b>DO NOT</b> apply more than 11 kg/ha in summer
		TAS	<b>DO NOT</b> apply more than 11 kg/ha in spring
			<b>DO NOT</b> apply more than 5.5 kg/ha in autumn
		SA, WA	<b>DO NOT</b> apply more than 11 kg/ha in summer
		Cape York	<b>DO NOT</b> apply more than 11 kg/ha in November
		Northern Gulf Mackay/Whitsunday	<b>DO NOT</b> apply more than 11 kg/ha in October
			<b>DO NOT</b> apply more than 5.5 kg/ha in November
	SE Queensland	<b>DO NOT</b> apply more than 11 kg/ha in the South East QLD catchments.	
<b>Withholding periods:</b>	<p><b>Harvest:</b> Cereals and Oilseeds: Not required when used as directed. Artichoke, Berry crops, Brassica vegetables, Citrus, Head lettuce, Pome fruit, Potato, Stone fruit: <b>DO NOT</b> harvest for 7 DAYS after application. <b>Grazing: DO NOT</b> graze or cut treated areas for stock food for 28 DAYS after application.</p>		
<b>Trade advice:</b>	Growers should note that MRLs or import tolerances do not exist in all markets for edible produce treated with MESUROL. If you are growing edible produce for export, please check with Bayer Crop Science Australia Pty Ltd for the latest information on MRLs and import tolerances BEFORE using MESUROL.		
<b>General instructions:</b>	<p>READ THE PRECAUTIONS regarding the protection of pets and livestock before using. STORE IN ORIGINAL CONTAINER. LOCK IN A SAFE PLACE PREVENTING ACCESS OF CHILDREN, DOGS, POULTRY, DUCKS OR OTHER ANIMALS. STORE SEPARATELY FROM ANIMAL FEEDS OR FEED STOCKS. NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION</p>		
<b>Precautions:</b>	<p><b>PETS</b> MESUROL contains a pet taste deterrent, but some pets may still find the bait attractive and eat the baits. Keep away from pets. Ensure pets do not have access to the baits, box or bag by locking them in a safe place. Dogs find these baits attractive and it may kill them if eaten. Keep dogs and other pets away from treated areas. Symptoms of pet poisoning may include (but are not limited to) constricted pupils, hypersalivation, vomiting, diarrhoea, difficulty in breathing, coughing and seizures. If poisoning is suspected, take pet to a veterinarian immediately. A veterinary treatment advice for pets that have ingested Mesurol is available. Do not administer ipecac syrup.</p>		
<b>Protection:</b>	<p><b>Protection of Livestock</b> STORE SEPARATELY FROM ANIMAL FEEDS OR FEED STOCKS. <b>DO NOT</b> treat areas on which poultry or pigs graze.</p> <p><b>Protection of Wildlife, Fish, Crustaceans and Environment</b> Toxic to birds and wild mammals. <b>DO NOT</b> use in areas where vulnerable, threatened, endangered or critically endangered mammals are known to occur. CLEAN UP SPILLED BAITS IMMEDIATELY so that they are not eaten by birds and other animals. <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers.</p>		

	<p><b>Protection of Honey Bees and Other Insect Pollinators</b> Highly toxic to bees. However, the use of this product as directed is not expected to have adverse effects on bees.</p>
<b>Storage and disposal:</b>	<p>Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. LOCK IN A SAFE PLACE preventing access by children, dogs, poultry, ducks or other animals. KEEP AWAY FROM DOMESTIC PETS. STORE SEPARATELY FROM ANIMAL FEEDS OR FEED STOCKS. ENSURE PLASTIC BAG IS COMPLETELY EMPTY BEFORE DISPOSAL. Puncture and bury empty bag in a local authority landfill. If no landfill is available, bury the bag below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty bags and product should not be burnt.</p>
<b>Safety directions:</b>	<p>Product is harmful if swallowed. May irritate the eyes. Avoid contact with eyes and skin. Do not touch baits. If on skin and after each baiting, wash thoroughly with soap and water. If dust is present wear disposable dust face mask covering mouth and nose. If applying by hand, wear elbow length chemical resistant gloves. After use and before eating drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves.</p>
<b>First aid instructions:</b>	<p>If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131 126, New Zealand 0800 764 766.</p>

APVMA Approval Number: 51851/to be determined

These representative label components are presented in the e-label format.

<b>Label name:</b>	BAYSOL SNAIL & SLUG BAIT										
<b>Signal headings:</b>	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS										
<b>Constituent statements:</b>	ACTIVE CONSTITUENT: 20 g/kg METHIOCARB (an anticholinesterase compound) CONTAINS BITREX™										
<b>Statement of claims:</b>	Proven protection from snails, slugs, slaters and millipedes in the home garden. Long lasting. Fast acting. Mould resistant.										
<b>Mode of action:</b>	Group	<b>1A</b>	Insecticide, Molluscicide								
<b>Net contents:</b>	250g 500g 600g 1 kg										
<b>Restrains:</b>	<p><b>DO NOT HEAP BAITS.</b>  <b>DO NOT</b> use directly on vegetable or fruit plants, or any other food plant.  <b>DO NOT</b> allow pets to access bait, box or bag – lock all in a safe place  <b>DO NOT</b> use in areas on which poultry or other domestic pets graze.  <b>DO NOT</b> use in areas where food producing animals may have access.  <b>DO NOT</b> graze or cut treated areas for stock food for 28 days after application.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers.  <b>DO NOT</b> use in areas where vulnerable, threatened, endangered or critically endangered mammals are known to occur. Toxic to birds and wild mammals. Clean up spilled baits immediately so that they are not eaten by birds or wild mammals.</p>										
<b>How to use:</b>	<p>READ THE PRECAUTIONS regarding the protection of pets before using.</p> <table border="1"> <thead> <tr> <th>AREA</th> <th>PEST</th> <th>RATE</th> <th>HOW TO APPLY</th> </tr> </thead> <tbody> <tr> <td>Gardens</td> <td>Snails, Slugs, Slaters, Millipedes</td> <td>100 baits per square meter (500 g ai/ha equivalence)</td> <td>           Sprinkle evenly onto ground.  <b>DO NOT HEAP BAITS.</b> Heaping is unnecessary and wasteful, and may pose a risk to dogs and cats.  <b>KEEP DOGS AWAY FROM TREATED AREAS.</b> Dogs find this bait attractive and it may kill them if eaten.  <b>KEEP AWAY</b> from domestic pets.  <b>DO NOT</b> apply to areas on which poultry or domestic pets graze.  <b>DO NOT</b> apply to areas where food producing animals may have access.         </td> </tr> </tbody> </table> <p>LOCK IN A SAFE PLACE PREVENTING ACCESS OF CHILDREN, DOGS, POULTRY, DUCKS OR OTHER ANIMALS.          NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED</p>			AREA	PEST	RATE	HOW TO APPLY	Gardens	Snails, Slugs, Slaters, Millipedes	100 baits per square meter (500 g ai/ha equivalence)	Sprinkle evenly onto ground. <b>DO NOT HEAP BAITS.</b> Heaping is unnecessary and wasteful, and may pose a risk to dogs and cats. <b>KEEP DOGS AWAY FROM TREATED AREAS.</b> Dogs find this bait attractive and it may kill them if eaten. <b>KEEP AWAY</b> from domestic pets. <b>DO NOT</b> apply to areas on which poultry or domestic pets graze. <b>DO NOT</b> apply to areas where food producing animals may have access.
AREA	PEST	RATE	HOW TO APPLY								
Gardens	Snails, Slugs, Slaters, Millipedes	100 baits per square meter (500 g ai/ha equivalence)	Sprinkle evenly onto ground. <b>DO NOT HEAP BAITS.</b> Heaping is unnecessary and wasteful, and may pose a risk to dogs and cats. <b>KEEP DOGS AWAY FROM TREATED AREAS.</b> Dogs find this bait attractive and it may kill them if eaten. <b>KEEP AWAY</b> from domestic pets. <b>DO NOT</b> apply to areas on which poultry or domestic pets graze. <b>DO NOT</b> apply to areas where food producing animals may have access.								
<b>How to prepare:</b>	<p>[Diagram]: Heaping Baysol is wasteful and may pose a risk to dogs or cats.          [Diagram]: Apply sparingly like this.          250 g pack AS A GUIDE 1 BAITS ARE SUFFICIENT TO COVER THE AREA OF THIS PACK.          500 g pack AS A GUIDE 2 BAITS ARE SUFFICIENT TO COVER THE AREA OF THIS PACK.          600 g pack AS A GUIDE 3 BAITS ARE SUFFICIENT TO COVER THE AREA OF THIS PACK.          1 kg pack AS A GUIDE 4 BAITS ARE SUFFICIENT TO COVER THE AREA OF THIS PACK.          [Diagram]: Lift flap here to open. To open, lift tab and pull up.          [Diagram]: Press here to break seal.          [Diagram]: Sprinkle baits. Refer to Directions for Use table.          [Diagram]: Re-close by inserting tab into slot. Store in a safe place.</p>										
<b>Caution:</b>	<b>Protection of Livestock and Pets</b>										

	<p>CLEAN UP SPILLED BAITS IMMEDIATELY so that they are not eaten by birds and other animals.          STORE SEPARATELY FROM ANIMAL FEEDS OR FEED STOCKS.  <b>DO NOT</b> treat areas on which poultry or pigs graze.</p> <p>Symptoms of pet poisoning may include (but are not limited to) constricted pupils, hypersalivation, vomiting, diarrhoea, difficulty in breathing, coughing and seizures. If poisoning is suspected, take pet to a veterinarian immediately.          A veterinary treatment advice for pets that have ingested Baysol is available.          Do not administer ipecac syrup.</p> <p><b>Protection of Wildlife, Fish, Crustaceans and Environment</b>          Toxic to birds and wild mammals.  <b>DO NOT</b> use in areas where vulnerable, threatened, endangered or critically endangered mammals are known to occur.          CLEAN UP SPILLED BAITS IMMEDIATELY so that they are not eaten by birds and other animals.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers.</p> <p><b>Protection of Honey Bees and Other Insect Pollinators</b>          Highly toxic to bees. However, the use of this product as directed is not expected to have adverse effects on bees.</p>
<b>Storage and disposal:</b>	<p>Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight.          LOCK IN A SAFE PLACE preventing access of children, dogs, poultry, ducks or other animals. Keep away from dogs and other domestic pets. Dogs find this bait attractive and it may kill them. If pets are poisoned, contact a veterinary surgeon immediately.          STORE SEPARATELY FROM ANIMAL FEEDS OR FEED STOCKS.          ENSURE THAT THE CONTAINER IS COMPLETELY EMPTY BEFORE DISPOSAL.          Dispose of empty container by wrapping in paper, placing in plastic bag and putting in garbage.          Empty packaging should not be burnt.</p>
<b>Safety directions:</b>	<p>Product is harmful if swallowed. May irritate the eyes. Avoid contact with eyes and skin. Do not touch bait except when wearing disposable gloves. If dust is present wear disposable dust face mask covering mouth and nose. If on skin and after each baiting, wash thoroughly with soap and water. Wash hands after use.</p>
<b>First aid instructions:</b>	<p>If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131 126, New Zealand 0800 764 766.</p>

Diagrams on label



Heaping Baysol is wasteful and may pose a risk to dogs or cats.

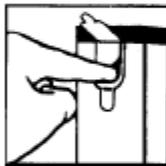


Apply sparingly like this.

Lift flap here to open.



To open lift tab and pull up.



Press here to break seal.



Sprinkle ~~baits~~ baits  
See How to Use.



Re-close by inserting tab into slot.  
Store in a ~~safe place~~ locked safe place

## ABBREVIATIONS

ADI	Acceptable daily intake (for humans), a level of intake of a chemical that can be ingested daily over an entire lifetime without any appreciable risk to health
Agvet Code	Agricultural and Veterinary Chemicals Code Act 1994
APVMA	Australian Pesticides and Veterinary Medicines Authority
ARfD	Acute reference dose, the estimated amount of a substance in food or drinking-water, (expressed on a body weight basis), that can be ingested or absorbed over 24 hours or less, without appreciable health risk
BA	bait
bw	body weight
CCI	Confidential Commercial Information
ChE	cholinesterase
d	Day
DEWHA	Department of the Environment, Water, Heritage and the Arts
DotE	Department of the Environment
EPA	Environmental Protection Agency
EU	European Union
FAISD	First Aid Instruction and Safety Directions
FAO	Food and Agriculture Organisation
FRD	Final Regulatory Decision
FSANZ	Food Standards Australia New Zealand
HG	Home garden
JMPR	Joint FAO/WHO Meeting on Pesticide Residues
kg	kilogram
LD <sub>50</sub>	Lethal Dose 50 (Median Lethal Dose)—the dose level at which 50% of the test animals died
LOQ	Limit of Quantitation
mg	milligrams
MOE	Margin of Exposure
MORAG	Manual of Requirements and Guidelines
MRL	maximum residue limit
NEDI	national estimated daily intake (of chemical)
NESTI	national estimated short-term intake

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NOAEL	no observable adverse effect level
NOEL	no observed effect level
OCS	Office of Chemical Safety within the Australian Government Department of Health
PMRA	Pest Management Regulatory Agency (Canada)
PPE	personal protective equipment
ppm	parts per million
PRD	Proposed Regulatory Decision
PRF	Preliminary Review Findings
SC	suspension concentrate
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons (formerly the Standard for the Uniform Scheduling of Drugs and Poisons)
USA	United States of America
WHO	World Health Organisation
WHS	worker health and safety
WP	wettable powder

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