Australian Government

Australian Pesticides and Veterinary Medicines Authority

OCTOBER 2016

Dimethoate: Proposed Regulatory Decisions

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

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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 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, occupational health and safety), the environment (environmental fate and ecotoxicology), residues and trade, chemistry, efficacy or target crop/animal safety. However, the scope of each reconsideration is determined on a case-by-case reflecting the specific issues raised by the new research or evidence.

The reconsideration process includes a call for data from a variety of sources, a scientific evaluation of that data and, following public consultation, a 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 science and evidence-based risk analysis with respect to the matters of concern, analysing all the relevant information and data available.

In undertaking reconsiderations, the APVMA works in close cooperation with external experts including the Department of the Environment and Energy, the Department of Health, Food Standards Australia New Zealand (FSANZ), and the state departments of agriculture, as well as other expert advisers as appropriate.

This document sets out the proposed regulatory decisions (PRD) relating to the active constituent omethoate and products containing omethoate when used in accordance with current approved label instructions.

This PRD and supporting technical reports on omethoate are available from the APVMA website. The technical reports include the areas of:

- Toxicology (published January 2011)
- Occupational Health and Safety (published March 2013)
- Residues and Dietary Risk Assessment Report (published August 2011), and
- Residues and Dietary Risk Assessment Report - Updated (published June 2016), which considered new information submitted since August 2011.

SUBMISSIONS FROM THE PUBLIC ARE INVITED

This proposed regulatory decision report:

- outlines the APVMA reconsideration process
- advises interested parties how to respond to the reconsideration
- summarises the technical assessments
- outlines the proposed regulatory action to be taken in relation to the continued approval and registration of dimethoate in Australia.

The APVMA invites written comments on this report. All comments on this report will be assessed by the APVMA prior to finalisation of the reconsideration and publication of the final regulatory decision report.

Preparing your comments for submission

When making your comments:

- clearly identify the issue and clearly state your point of view
- give reasons for your comments, supporting them, if possible, with relevant scientific information and indicating the source of the information you have used
- suggest to the APVMA any alternative risk management solutions you may have.

Please structure your comments in point form, referring each point to the relevant section in the report.

All submissions to the APVMA will be acknowledged in writing via email or by post.

When making a submission please include:

- contact name
- company or group name (if relevant)
- postal address
- email address (if available)
- the date you made the submission.

Note that all submissions received are subject to the Freedom of Information Act 1982, the Privacy Act 1988 and the Agvet Code. All personal and confidential commercial information (CCI) material contained in submissions will be treated confidentially. (A full definition of 'confidential commercial information' is contained in the Agvet Code).

The closing date for submissions is Tuesday 24 January 2017

Submissions can be sent to:

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EXECUTIVE SUMMARY

Introduction

Dimethoate (O,O-dimethyl S-methylcarbamoylmethyl phosphorodithioate) is a broad use, systemic organophosphorus insecticide and acaricide that has been used in both agricultural and home garden situations. Dimethoate products have been used since 1956 and products were first registered under previous State based registration schemes.

Along with other pesticides of this class, the mode of action is through inhibition of the enzyme acetylcholinesterase. This inhibition results in the over-stimulation of those parts of the nervous system that use acetylcholine to transmit nerve impulses.

The APVMA began its reconsideration of dimethoate together with that of the related chemical, omethoate in 2004. At the commencement of this reconsideration dimethoate products were registered for more than 200 use patterns and to control more than 80 insect pest species in horticultural, cereal and field crops and pastures.

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

- toxicology
- occupational health and safety (OHS)
- residues including dietary exposure and trade.

Following publication of the Dimethoate Residues and Dietary Risk Assessment Report in 2011, which identified unacceptable risks to consumers from exposure to dimethoate residues in food, all products containing dimethoate were suspended on 6 October 2011. New instructions for use were issued that mitigated the dietary risks identified in that report by limiting certain use patterns or adding longer withholding periods where appropriate.

This PRD confirms those changes to the instructions for use and also reiterates the previously published recommendations in the residues and OHS reports for further changes to the current use instructions for dimethoate products to amend the safety directions for use, add re-entry intervals and to remove use patterns that are not supported by sufficient residues data. These recommendations were first published in August 2011 (residues report) and 2013 (OHS reports) and information given to the APVMA in response to those reports has been assessed and has resulted in the retention of particular uses on certain crops and the refinement of the recommended re-entry periods.

It also proposes that home garden products containing 100 g/L dimethoate or above be cancelled as they do not meet the safety criteria for home garden use.

As part of the toxicology assessment of dimethoate, health-based guidance values (HBGVs) have been recommended amended or established:

- the acceptable daily intake (ADI) for dimethoate has been amended from 0.02 mg/kg bw/day to 0.001 mg/kg bw/day

- an acute reference dose (ARfD) for dimethoate of 0.02 mg/kg bw has been established.

There have been no changes recommended to the approval status of the active constituent or to the current poisons schedule of dimethoate. It is proposed that the APVMA Standard for Active Constituents for dimethoate be revised to include maximum impurity levels for isodimethoate and omethoate.

Proposed regulatory decisions

After consideration of all data and assessments, the APVMA proposes the following regulatory actions:

- affirm active constituent approvals for dimethoate
- amend the active constituent standard for dimethoate to include impurity limits for omethoate, isodimethoate and water with no changes to the existing impurity limit for O,O,S-trimethyl phosphorodithioate
- cancel the registrations of dimethoate home garden products of 100 g/L or greater
- vary the instructions for use for agricultural 400 g/L dimethoate products to delete or amend certain use patterns, amend safety directions and add re-entry intervals
- vary the particulars of registration of all agricultural 400 g/L dimethoate products to remove pack sizes of 1 L or less
- affirm these product registrations once the necessary changes to the particulars have been made
- amend the maximum residue limits (MRLs) for dimethoate in Tables 1 and 4 of the APVMA MRL Standard once the period for use of varied labels has ended.

1 INTRODUCTION

Dimethoate (O,O-dimethyl S-methylcarbamoylmethyl phosphorodithioate) is a broad use, systemic organophosphorus insecticide and acaricide that has been used in both agricultural and home garden situations. Products were registered for more than 200 use patterns and to control more than 80 insect pest species in horticultural, cereal and field crops and pastures.

Dimethoate products have been used in Australia since 1956 and products were first registered under previous State based registration schemes.

Along with other pesticides of this class, its mode of action is through inhibition of the enzyme acetylcholinesterase. This inhibition results in the over-stimulation of those parts of the nervous system that use acetylcholine to transmit nerve impulses. The APVMA began its reconsideration of dimethoate together with that of the related chemical, omethoate in April 2004.

1.1 Current regulatory status of dimethoate in Australia

As of October 2016 there were eight active constituent approvals for dimethoate, fifteen registered products containing dimethoate and eight products that have their registration suspended with use permitted only with additional instructions for their use. Three of the twenty three products are for home garden use and twenty for agricultural use.

Dimethoate is applied by ground boom, aerial spraying, air blast, backpack sprayer and as a fruit dip and seed dressing. Appendix B contains a consolidated table of previous, existing and proposed label use patterns for the 400 g/L dimethoate products.

Table 1.1: Formulation types for dimethoate

Formulation types	Level of active constituent	Product type
Aerosol (currently no products)	0.3 g/L	Home garden
Emulsifiable concentrate (EC)	100 g/L	Home garden
Emulsifiable concentrate (EC)	300 g/L	Home garden
Emulsifiable concentrate (EC)	400 g/L	Commercial

1.2 APVMA reconsideration of dimethoate

Dimethoate was recommended by a number of stakeholders to the Australian Pesticides and Veterinary Medicines Authority (APVMA) for reconsideration in 1994 as part of the call for nominations of existing chemicals for reconsideration, due to human health concerns.

This nomination was assessed by the APVMA and its partner agencies and dimethoate was included in the list of chemicals to be reviewed but not prioritised for inclusion in the first three cycles of reconsiderations.

The reconsideration of the active constituent dimethoate, all products containing dimethoate and their associated labels commenced in 2004 because of concerns over toxicological, occupational health and safety, trade and residues issues. As omethoate is also a breakdown product of dimethoate and a pesticide

in its own right, the reconsideration of omethoate was commenced together with that of dimethoate. These two reconsiderations are now being conducted separately.

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

- toxicology
- occupational health and safety and
- residues: including dietary exposure and trade

Consultation and submissions received for the reconsideration of dimethoate

In 2004, during the three month consultation period after publication of the scope of the dimethoate reconsideration, the APVMA received submissions of data and use pattern information from holders of registrations and the chemical coordinators representing the states and territories, as well as public submissions.

From 2006 onwards the APVMA identified a lack of residues data to support Australian use patterns for many crops, consulted with user, industry and government representatives and participated in meetings with affected stakeholders.

In May 2010, Horticulture Australia Ltd (HAL) submitted additional residues data for dimethoate in a range of crops. The APVMA assessed this and all other submitted residues information for dimethoate and published the results in the first *Dimethoate Residues and Dietary Risk Assessment Report* (August 2011).

Interim action to suspend products October 2011

In August 2011, the APVMA:

- published the residues and dietary exposure assessment which determined that existing label directions were not acceptable for many crops due to acute dietary risks
- proposed that all products containing dimethoate be suspended and proposed that modified instructions be issued for use of these products during the suspension
- requested information that could be used to refine the dietary risk assessment or to assist in developing interim, modified instructions during the proposed suspension period.

The proposed suspension and consultation on new use instructions attracted a significant level of interest from a wide range of stakeholders. The APVMA attended stakeholder meetings and participated in teleconferences with stakeholder groups regarding the proposed suspension. The APVMA received twenty submissions from end-users and industry groups.

These submissions and information were assessed and considered in the APVMA decision to suspend dimethoate products and to issue modified interim instructions for their use that mitigated the identified acute dietary risks.

As noted in the residues report, further residues data were required to support continued use of some of the interim use patterns that were permitted, on an interim basis, after the suspension.

Since August 2011, the APVMA has received additional residues studies for a range of crops from industry bodies and holders of registrations.

These studies have been assessed by the APVMA and have been included in the *Dimethoate Residues and Dietary Risk Assessment Report Updated* (June 2016), which incorporated new information submitted since August 2011.

Other submissions received since the publication of the OHS report

Since the publication of the OHS report in March 2013, the APVMA has received submissions, data and further information from user groups and holders of registrations which have been considered and the outcomes included in this PRD.

Next steps for this reconsideration

In this PRD report certain regulatory actions are proposed based on the assessments conducted by the APVMA and its partner agencies.

Persons and organisations are invited to submit their comments and related information relevant to these proposed decisions directly to the APVMA. This consultation period continues for three months ending on Tuesday 24 January 2016.

At the end of the consultation period the APVMA will publish the submissions, assess the information received and will determine the final regulatory actions for this reconsideration.

1.3 Regulatory context

The basis for a reconsideration of the approvals and registrations of a chemical is whether the APVMA remains satisfied that the safety, efficacy and trade criteria listed in sections 5A, 5B and 5C of the Agvet Codes for continued registration and approval are being met. The requirements that are relevant to the scope of this reconsideration (toxicology, occupational health and safety, residues and trade) 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 unduly prejudice trade or commerce between Australia and places outside Australia.

The APVMA also considers whether labels for containers for chemical products containing dimethoate 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.

There are three possible outcomes of the reconsideration of the active constituent dimethoate, registration of products containing dimethoate and all associated label approvals. Based on the information evaluated by the APVMA may be:

- satisfied that the active constituent approvals, product registrations and associated label approvals continue to meet the safety and labelling criteria and therefore affirms the registrations and approvals
- not satisfied that the approvals and registrations meet the safety and labelling criteria but is satisfied that the relevant particulars or conditions of those registrations or approvals can be varied in such a way as to allow the approval or registration to be affirmed
- not satisfied that the relevant particulars or conditions of those registrations or approvals can be varied in such a way as to allow the approval or registration to be affirmed and thus suspends or cancels the registration and/or approvals.

It is proposed in this PRD that the APVMA should

- affirm the current active constituent approvals for dimethoate
- cancel the remaining dimethoate home garden products as all of these have concentrations of 100 g/L or greater
- vary the instructions for use particulars (instructions for use) for all label approvals of the 400 g/L dimethoate agricultural products and
- affirm the registrations of products once those labels have been varied.

2 INTERNATIONAL REGULATORY STATUS

Dimethoate is approved for use in Canada, the European Union (23 countries), the United Kingdom, the United States, and New Zealand.

Canada

Dimethoate is approved for use in Canada in a range of situations, with eight products registered as of September 2016. The most recent re-evaluation of dimethoate was completed on 30 December 2015. Certain use patterns were deleted due to user safety concerns, personal protective equipment was specified and re-entry intervals established for a range of situations. To protect pollinators, dimethoate cannot be applied to blooming crops when bees are foraging.

Residential uses of dimethoate were voluntarily discontinued by the product holders in 2004.

United States

Dimethoate is approved for use in the United States in a range of situations and is currently undergoing a registration review. Preliminary assessments were published in September 2015. The previous registration review was completed in 2008.

Residential uses of dimethoate are not permitted.

Europe and the United Kingdom

Dimethoate is currently approved in the European Union as a plant protection product (expiry 30 September 2017) and is authorised for use in 23 European countries.

There are currently four commercial products containing dimethoate registered in the United Kingdom for use on ornamental plants, rye, triticale and wheat.

New Zealand

Dimethoate was included in a review of all organophosphorus and carbamate pesticides which was completed in July 2013. Dimethoate was listed as partially approved with controls. There are currently three 400 g/L dimethoate products listed as approved on the NZ ACVM register.

FAO/WHO Joint Meeting on Pesticide Residues (JMPR)

The FAO/WHO JMPR evaluated dimethoate and residues (including long-term dietary risk) most recently in 2003 and 2008 respectively. The JMPR has concluded that the long-term intake of residues of dimethoate from the uses considered in 2008 is unlikely to present a public health concern.

3 SUMMARY OF ASSESSMENTS AND PROPOSED FINDINGS

3.1 Toxicology

In January 2011, the APVMA published the Human Health Risk Assessment of Dimethoate. This assessment was conducted by the then Office of Chemical Safety and Environmental Health (OCS—within the Department of Health and Ageing). The OCS assessed toxicology data submitted to the reconsideration, together with information from its toxicological database and relevant published data.

Toxicology assessment

The toxicology assessment included:

- hazard identification—the identification of the type and nature of adverse effects that a substance can potentially cause in an organism, animal species or human.
- hazard characterisation (often referred to as the dose response characterisation)—the qualitative and, wherever possible, quantitative description of the inherent property of a substance having the potential to cause adverse effects. This should, where possible, include a dose–response assessment and its attendant uncertainties.
- identification of a threshold (the No Observed Adverse Effect Level—NOAEL) below which no adverse effects occur following short, medium or long-term exposure to the chemical. As part of the assessment the OCS also sets (or confirms) the HBGVs for exposure to that substance. These are the ADI (for long term exposure) and if single or short term exposure is of concern, the ARfD. These standards are used in any subsequent residues and dietary risk assessment.

Dimethoate is a contact and systemic organophosphorus pesticide and its most sensitive toxicological endpoint in animals and humans is the inhibition of the activity of the enzyme, acetylcholinesterase (AChE). This enzyme is important for the conductance of nerve signals. Inhibition of AChE results in the over-stimulation of those parts of the nervous system that use acetylcholine to transmit nerve impulses. Signs of intoxication at high doses are consistent with AChE inhibition and include laboured or shallow breathing, salivation and diarrhoea, spasms, tremors and coma. If intoxication is severe, convulsions and death can eventuate. Signs of intoxication at low doses noted in animal studies include hypersensitivity, abnormal gait, body tremors and impaired performance on tests of grip strength or task performance.

Dimethoate has moderate acute oral toxicity and low to moderate dermal toxicity. The Median Lethal Dose (LD_{50}) for dimethoate is 150–414 mg/kg bw in rats and 60 mg/kg bw in mice and the dermal LD_{50} was determined to be in excess of 2000 mg/kg in rat studies. It is a slight eye irritant but not a skin irritant. Although dimethoate is not a skin sensitiser, its EC formulation (400 g/L) is. The formulation is also a moderate eye and skin irritant. In repeat does studies in mice, rats and dogs, dose–related inhibition of plasma, erythrocyte and brain ChE activities was generally the most sensitive manifestation of dimethoate toxicity.

Dimethoate is not genotoxic or carcinogenic. It is not teratogenic (has not been found to cause birth defects)

Summary of findings and outcomes

During the course of this reconsideration the OCS has:

- amended the acceptable daily intake (ADI) from 0.02 mg/kg/day to 0.001 mg/kg bw/day
- established a new acute reference dose (ARfD) for dimethoate of 0.02 mg/kg bw.
- recommended that there were no objections on toxicological grounds to the ongoing approval of dimethoate
- recommended that limits for significant impurities be established (discussed further in the OHS assessment)
- advised that no changes are required to the current Schedule 6 listing for dimethoate
- advised the current first aid instruction for dimethoate remains appropriate.

Approval status

The OCS assessment concluded that there are no objections on toxicological grounds to the ongoing approval of dimethoate active constituents.

The OCS recommended that impurity limits for omethoate and isodimethoate be established on the basis of toxicological concerns, in addition to the existing impurity limit for O,O,S-trimethyl phosphorodithioate.

In making this recommendation they noted that these impurities are more toxic than dimethoate itself and recommended that they should be set at the lowest practicable level.

Acceptable Daily Intake (ADI) amended

The ADI for humans is the level of intake of a chemical that can be ingested daily over an entire lifetime without appreciable risk to health. It is established by dividing the overall NOAEL for the most sensitive, relevant adverse effect from a suitable study by an appropriate safety factor—the magnitude of the safety factor is selected to account for uncertainties in extrapolation of animal data to humans and intraspecies variation.

The OCS has revised the Australian acceptable daily intake (ADI) value from 0.02 mg/kg bw/day to 0.001 mg/kg bw/day (31 May 2012), based on a No Observable Effect Level (NOEL) of 0.1 mg/kg bw/d in developmental neurotoxicity studies in rats, with a 100–fold safety factor.

Acute Reference Dose (ARfD) established

The 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, without appreciable health risk to the consumer on the basis of all known facts at the time of the evaluation.

The OCS has established an acute reference dose (ARfD) for dimethoate of 0.02 mg/kg bw based on a NOEL of 0.2 mg/kg bw/d for inhibition of ChE activity in whole blood in a 14–57 day human volunteer study, with a 10–fold safety factor. This was established 23 November 2010. An ARfD had not been previously established for this compound in Australia.

Poisons schedule

The OCS recommended that dimethoate remain in Schedule 6 of the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Further recommendations that products containing 0.03% or less of dimethoate could be considered suitable for cut-off to Schedule 5 were made in the Human Health Exposure and Risk Assessment, however there are no longer any products of this type registered.

Warning statements and first aid instructions

The OCS recommended that the current first aid instruction for dimethoate products (namely 'm') as listed in the table below remains appropriate. The APVMA has accepted this recommendation. Further recommendations regarding appropriate first aid instructions for products containing 0.03% or less of dimethoate were made in the Human Health Exposure and Risk Assessment below. However as there are no longer any products of this type registered, these instructions are currently not applicable.

Table 2: Recommended first aid instructions from both the toxicology and OHS assessments

Dimethoate	Codes	Text
in 0.03 percent pressurised spray packs (none currently registered)	a, o	If poisoning occurs, contact a doctor or Poisons Information Centre. (phone Australia 131 126). If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water.
In other preparations	m	If swallowed, splashed on skin or in eyes, or inhaled, contact a Poisons Information Centre (phone Australia 131 126) or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed, activated charcoal may be advised. Give atropine if instructed

3.2 Human Health Exposure and Risk Assessment (OHS)

Summary of findings

In 2013 the APVMA published the Exposure and Risk Assessment including Occupational Health and Safety Assessment of Dimethoate which considered all the risks to workers using dimethoate or re-entering crops treated with dimethoate, and risks to home gardeners.

The OHS assessment considered the:

- suitability of products for home garden use
- potential exposure during handling or use of the product by professional users
- potential post-application exposure, during re-entry to treated crops
- adequacy of the safety directions and need for any additional warnings or engineering controls.

The OCS recommended in this assessment that the APVMA cannot be satisfied that the use of dimethoate products according to their existing label directions will not be a risk to workers unless changes are made to the existing label instructions for use, safety directions, warnings and re-entry periods. The recommended changes are:

- removing products containing of 100 g/L dimethoate or greater from home garden use
- limiting pack sizes for the agricultural products to 1 L or greater to prevent home garden use
- deleting instructions for:
    - outdoor and indoor application by fogging or misting (due to inhalational risks)
    - seed treatment
    - trunk (or stem) injection.
- including instructions for the use of engineering controls such as enclosed cabs fitted with appropriate air filters to protect operators using air blast spray
- prohibiting open mixing and loading for aerial application
- prohibiting the hand application of dimethoate products for those use patterns with higher application rates
- amending safety directions and PPE
- including new re-entry interval recommendations for all situations.

The OCS also reiterated the recommendation from the toxicology report that impurity limits for omethoate and isodimethoate be established in addition to the existing impurity limit for O,O,S—TMP.

The OCS has also recommended amendments to first-aid instructions, precautionary statements, safety directions and re-entry statements to be incorporated onto labels of those dimethoate products supported for ongoing registration as listed below.

Findings of the OHS assessment

The occupational risk during mixing/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-Effect-Level (NOAEL) for the most sensitive adverse effect relevant to humans. The larger the MOE the lower the risk—typically a MOE of 100 is considered an adequate margin of safety based on non-cancer effect in laboratory animals while a MOE of 10 is considered appropriate based on human data

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

As user exposure to these products is expected to be of short duration and intermittent, a short-term NOEL of 0.2 mg/kg bw/d based on inhibition of blood ChE activity in a 14–57 day human study was used for the OHS assessment. A dermal absorption factor of 5.1% from an in vitro study with human epidermis, and a default value of 100% inhalation absorption were used. As the NOAEL is based on human data, A MOE > 10 is acceptable, which takes into account inter-species variability. Qualitative assessments were conducted on other use patterns, which included misting machine, seed treatment, trunk or banana stem injection, pre-planting dipping and post-harvest dipping (including quarantine treatment). Personal protective equipment (PPE) was revised based on the OHS risk assessment.

In the absence of chemical-specific worker exposure data for dimethoate products, surrogate exposure data (the Pesticide Handler Exposure Database, PHED) were used to estimate exposure during mixing/loading and application by boom spraying, air blast spraying, aerial spraying and hand spraying (vehicle mounted and backpack).

Appropriate exposure data was not available for some use patterns to give a quantitative assessment of the risk. Therefore qualitative assessments of exposure risks were conducted for those use patterns which included misting machine, seed treatment, trunk or banana stem injection, pre-planting dipping and post-harvest dipping (including quarantine treatment).

PPE recommendations were revised based on the OHS risk assessment.

The OCS determined that the estimated worker exposure during use was acceptable for:

- application by ground boom equipment at the rates on the labels
- air blast (with additional engineering controls such as enclosed cabs fitted with appropriate air filters)
- aerial application (with closed systems for mixing and loading)
- plant or fruit dipping (with elbow length chemical resistant gloves).

However, based on the likelihood of an unacceptable risk to operators, the OCS recommended that the following application methods should be deleted from product labels:

- misting or fogging for outdoor or indoor application (due to risk of inhalation of very fine droplets)
- seed treatment
- trunk or banana stem injection.

The OCS also noted that hand application of dimethoate products is only supported at low or intermediate application rates. The OCS has noted that the acceptability of worker exposure rates for handheld and knapsack applications varies with the daily work rate as outlined below:

- hand application by vehicle-mounted low pressure hand wand (assuming a maximum of 1000 L per day):
    - unacceptable at the highest application rate (1.6 kg ai/d)
    - acceptable at the work rate of 0.6 kg ai/d or less, with gloves and respirator
- hand application by knapsack/backpack (maximum application 100 L/day)
    - unacceptable at work rates at and above 0.06 kg ai/d (150 mL product /100L)
    - acceptable at work rates of 0.03 kg ai/d or less (75 ml product/100 L), with the use of elbow length gloves.

The highest application work rates are the 25 mL product /8 L water (= 312.5 mL/100 L) and 310–400 mL product /100 L use patterns for ornamental farm and forest trees. These are not acceptable for application by knapsack or by low pressure handheld wand. The APVMA proposes a restriction on these use patterns of:

- DO NOT apply by handheld knapsack or motorised handheld equipment (ornamental farm and forest trees 310–400 mL/100 L).

Additionally the application rate of 150 ml/100 L for the control of Mediterranean fruit fly on citrus when applied by knapsack or backpack exceeds 0.06 ai/day and is not acceptable. The APVMA proposes a restriction on this higher use rate for citrus of:

- DO NOT apply by handheld knapsack or backpack equipment (citrus 150 mL/100 L use patterns)

Following application to crops, workers may be exposed to dimethoate foliar residues when undertaking post-application (re-entry) activities. The OCS recommended that workers should wear PPE until the residues dissipate to acceptable levels. Re-entry intervals have been assigned for all label crops in this report.

Assessment of home garden 100–300 g/L and 3 g/kg products

The OCS also determined that products containing 100 g/L or more of dimethoate are not appropriate for home garden use on the basis of their high acute oral toxicity and moderate to severe skin and eye irritation potential. These products do not comply with the APVMA Guideline 3.6 for pesticides intended for domestic use (Data Guidelines Part 3 Toxicology) which specifies that any domestic pesticide formulation that may be ingested should not be expected to be acutely toxic to a child at doses up to 1500 milligram per kilogram body weight. The guidelines also specify that the irritancy to skin and eyes of domestic pesticide formulations should be low.

The OCS also recommended that pack sizes of dimethoate 400 g/L agricultural EC products should be greater than 1 litre to discourage home garden use.

The OCS confirmed that the home garden aerosol (HG AE) product containing 0.3 g/kg dimethoate met the criteria for home garden use as it is not expected to be acutely toxic to a child at doses up to 1,500 mg of product/kg bodyweight. The OCS recommended revised Safety Directions and First Aid Instructions for this product and noted that it could be considered suitable for a cut-off to Schedule 5. However, there are no products of this type currently registered and therefore these recommendations may be relevant to future product registration applications.

Safety directions

The following changes in safety directions are recommended:

Safety directions to be deleted

Given that the home garden use of dimethoate emulsifiable concentrate (EC) products of 100 g/L or higher is no longer supported, the safety directions for HG EC 100 g/L or less should be deleted from the FAISD handbook.

There are no longer any registered dimethoate wettable powder (WP) products, therefore the entry for WP 88 g/kg or less should be deleted from the FAISD handbook.

Safety directions to be amended

Table 3: Recommended safety directions EC 400 g/L or less

Codes	Text
Product type: EC 400 g/L or less	
130 131 132 133 190 207 211 180 210 211	Poisonous if absorbed by skin contact, inhaled or swallowed. Repeated minor exposure may have a cumulative poisoning effect. Will damage eyes and skin. Repeated exposure may cause allergic disorders. Avoid contact with eyes and skin.
279 280 281 290 292 293 294c 296 298	When opening the container and preparing spray wear cotton overalls buttoned to the neck and wrist, a washable hat, a PVC or rubber apron, elbow-length chemical resistant gloves, a face shield and impervious footwear
279 282 (spray) (or dip for pre-plant and post-harvest dipping) 290 294c	When using the prepared spray (or dip for pre-plant and post-harvest dipping) wear elbow-length chemical resistant gloves.
289 420 (vehicle mounted low pressure equipment) 290 292b 294c 300 307	If applying by hand by vehicle mounted low pressure equipment wear cotton overalls buttoned to the neck and wrist, elbow-length chemical resistant gloves and a half face-piece respirator with organic vapour/gas cartridge or canister
330 332 340 342 340 343 351 360 361 362 364 366	If clothing becomes contaminated with product remove clothing immediately. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use wash gloves, face-shield, respirator and contaminated clothing.

Table 4: Recommended safety directions—0.3 g/kg aerosol – product now discontinued

Codes	Text
Product type: Home garden 0.3 g/kg aerosol	
160 162 163 164 210 211 220 223 340 343 340 342 351	May irritate eyes, nose, throat and skin. Avoid contact with eyes and skin. Do not inhale spray mist. If product in eyes wash it out immediately with water. If product on skin, immediately wash area with soap and water. Wash hands after use

Precautionary statements

The following new precautionary statements should be included in product labels for all products:

- DO NOT apply by misting or fogging equipment
- DO NOT apply with air blast spray equipment unless operators are protected by engineering controls such as enclosed cabs fitted with appropriate air filters
- DO NOT use open mixing/loading systems for aerial application

Hand application of dimethoate products is not acceptable at the higher application rates.

- For forestry tree uses at the 310 mL/100 L rates and above, the following restraint should be added to the critical comments section of the label;
    - DO NOT apply by handheld knapsack, backpack or motorised handheld equipment (ornamental farm and forest trees 310–400 mL/100 L).
- For the higher 150 ml/L rates on citrus, the following restraint should be added to the critical comments, if that higher use rate is retained on labels:
    - DO NOT apply by handheld knapsack or backpack equipment (citrus 150 mL/100 L use patterns).

These statements will be included on labels as restraint statements for the appropriate use patterns.

Re-entry statements

The exposure of workers depends on the level of dislodgeable foliar residue or (DFR) and how much can transfer to people during a particular activity (the transfer coefficient).

As there were no direct studies of worker exposure during re-entry activities in crops following the application of dimethoate, the OCS recommended re-entry intervals based on information from three studies of post-application DFR on apples, tomatoes and leaf lettuce and the transfer coefficients available from the US EPA Post Harvest exposure calculator. Since those recommendations were made, the US EPA Exposac calculator (US EPA 2013) has been revised to include more exposure data. The APVMA has recalculated the recommended re-entry intervals using the 2013 US EPA Exposac calculator.

The previously recommended and currently recommended re-entry statements for dimethoate use patterns are summarised in Table 5 below. If workers need to enter a treated area before the re-entry interval has ended then it is recommended that cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves are worn.

Table 5: Recommended re-entry statements for all crop types

Crop	2012 recommendation	Current recommendation
Avocado, mango abius, santols, casimiroas, custard apple, sapodillas, wax jambus	Evergreen trees: day 19 hand harvest, day 12 pruning tying, day 4 irrigation, scouting, hand weeding	Day 9 for fruit thinning (by hand)—(mango–if applicable activity) Day 2 for hand harvesting, Day 0 (once spray has dried) for irrigation, orchard maintenance, pruning, scouting, transplanting, weeding (hand)
Citrus fruit at 150 ml/100 L rate (proposed for deletion)		Day 9 for hand harvesting Day 2 for hand pruning, scouting Day 0 (once spray has dried) for orchard maintenance, weeding, baiting/trapping, transplanting,
Citrus fruit at 75 ml/100 L rate		Day 4 for hand harvesting Day 0 (once spray has dried) for hand pruning, irrigation (non-hand set), orchard maintenance, weeding, baiting/trapping, scouting, transplanting
Litchi and pawpaw		Day 0 (once spray has dried) for; harvesting (hand), frost control, orchard maintenance, propping, pruning (hand), scouting, spreading bins, thinning fruit, training, transplanting, weeding (hand)
Grapes—*restricted to pre-flower uses since Oct 2011*	Vine/trellis: day 5 girdling, turning day 0 scouting, hand harvest, leaf pulling, thinning, pruning training	Day 11 for girdling, turning (table grapes) Day 6 for hand harvesting, leaf pulling, tying/training Day 0 for bird control, burndown, ditching, irrigation (hand set), pruning (hand), weeding (hand), propagating, scouting, transplanting, trellis repair
Passionfruit		Day 6 for hand harvesting (from trellis) Day 0 (once spray has dried) for irrigation (hand set), pruning (hand), weeding (hand), scouting, transplanting, tying/training
Stone fruit—and pome fruit	Deciduous trees: day 16 fruit thinning day 9 hand harvest, pruning, training	Day 5 for thinning fruit Day 0 (once spray has dried) for; harvesting (hand), fertilizing, frost control, orchard maintenance, propping, pruning (hand), hand, scouting, spreading bins, training, transplanting, weeding (hand)
Sweet corn	Sweetcorn: day 9 for hand harvesting or detasseling.	Day 6 for; detasseling (hand), harvesting (hand) Day 0 (once spray has dried) for; irrigation (hand set), scouting, topping, weeding (hand)
Ornamentals cut flowers, protea and wildflowers	Other crops: day 0 for all activities	Day 0 (once spray has dried) for; container moving, cut flowers harvesting (hand), irrigation (hand set), pinching, pruning (hand), scouting, transplanting, weeding (hand)
Ornamental farm and forest trees	Evergreen trees: day 19 hand harvest, day 12 pruning tying, day 4 irrigation, scouting, hand weeding	Day 9 for irrigation (hand set) Day 7 for harvesting (hand) (Christmas tree/ seed cones) Day 1 for pruning (hand), shaping, scouting Day 0 (once spray has dried) for; container moving, grading/tagging, transplanting, weeding (hand)

Crop	2012 recommendation	Current recommendation
Dipping	Post-harvest dipping of fruit and vegetables, and pre-plant dipping of plants: no change to previous recommendation: DO NOT handle treated fruit, vegetable or plant until the product solution has dried. If prior handling is required, wear elbow-length chemical resistant gloves.	
Glasshouses and other confined areas	No change to previous recommendation: DO NOT re-enter until spray deposits have dried and areas has been thoroughly ventilated.	
All other crops;	Banana, pawpaw, litchi, berries vegetables (except sweet corn), grain legumes, cereals, cotton, oilseeds, forage crops, tobacco, ornamental shrubs, duboisia, oil tea tree: Day 0 for all activities DO NOT enter treated areas until the spray has dried, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.	
Home garden edible crops	Do not pick fruit or vegetables for 7 days after spraying	This statement is currently not required as ALL uses of this product on fruits or vegetables were suspended in October 2011.

3.3 Active constituent standard listing of maximum impurities

Under section 5A(2)(a) of the Agvet Code, the APVMA must have regard to the extent to which the constituent will contain impurities when considering the safety of active constituents.

As part of the approval process an active constituent, the APVMA establishes a standard for that active constituent that typically specifies the minimum purity of the active constituent and the maximum level of the relevant impurities, particularly those of toxicological significance. These active constituent standards are published on the APVMA website.

Internationally, the Food and Agriculture Organization (FAO) also establishes standards for active constituents, including for dimethoate [1].

The APVMA notes that the OCS has recommended that impurity limits for omethoate and isodimethoate be established in addition to the existing impurity limit for impurity O,O,S-trimethyl phosphorodithioate (OOS–TMP) as they are impurities of toxicological significance.

The APVMA standard has a current upper limit of 5 g/kg for OOS–TMP and it is proposed that this should remain unchanged.

The FAO Standard specifies maximum impurity limits of 2 g/kg for omethoate and 3 g/kg for isodimethoate which the APVMA proposes to add to its standard.

[1] www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/Specs/Dimethoate2012_2.pdf available from www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/jmps/en/

The FAO Standard also includes a maximum limit of 2 g/kg for water, on the basis that the control of water content is critical for the stability of dimethoate. The APVMA proposes to add this limit to its Standard.

The APVMA proposes to adopt the maximum impurity limits for omethoate, isodimethoate and water in the FAO Standard in addition to the current impurity limit for OOS–TMP.

Table 6: Current APVMA and FAO Standards for dimethoate

	Current APVMA standard	FAO specification for technical dimethoate: 59/TC (May 2005)
1. Description	The material shall consist of dimethoate together with related manufacturing impurities and shall be in the form of white to greyish crystals, free from visible extraneous matter and added modifying agents	The material shall consist of dimethoate together with related manufacturing impurities and shall be a white solid, having a mercaptanic odour, free from visible extraneous matter and added modifying agents.
2. Common name	Dimethoate	Dimethoate
3. Chemical name (IUPAC)	*O,O*-dimethyl S-methylcarbamoylmethyl phosphorodithioate	O,O-dimethyl S-methylcarbamoylmethyl phosphorodithioate, 2-dimethoxyphosphinothioylthio-N-methylacetamide
4. CAS number	60–51–5	60–51–5
5. Identity test	identity of the active constituent must be established by one or more of the following methods: spectroscopic tests (IR spectrum, NMR, mass spectra), Chromatography (HPLC or GC retention time with reference compound) or any other suitable test method	HPLC retention time (CIPAC E, p. 69); IR spectrum in CCl_4 or CS_2 solution (CIPAC Handbook H, 1998, p. 155).
6.1 Composition: active constituent	Active constituent: 950 g/kg minimum	The dimethoate content shall be declared (not less than 950 g/kg) and, when determined, the mean measured content shall not be lower than the declared content
6.2 Composition: toxic or relevant impurities	*O,O,S*-trimethyl phosphorodithioate CAS No. 2953–29–9 Maximum 5 g/kg	Omethoate CAS No. 1113-02-6 Maximum 2 g/kg Isodimethoate CAS No. 3344-11-4 Maximum 3 g/kg Water Maximum 2 g/kg

3.4 Date-controlled agrichemical products

Dimethoate is listed as a date-controlled agricultural chemical product in Schedule 1 of the Agricultural and Veterinary Chemicals (Agvet) Code Regulations. As such holders of registrations must provide an expiry date for products containing dimethoate. Both the date of manufacture and the expiry date must be included on the label for these products.

This requirement is not affected by the reconsideration of dimethoate and there are no proposals to change this requirement. The registration conditions of dimethoate products will continue to include a requirement to have an expiry date and to keep records.

3.5 Residues, dietary risk assessment and trade

The residue assessment for the reconsideration of dimethoate was undertaken by the APVMA Residues and Trade Team, which considered all the available and relevant information regarding the residues of dimethoate following the treatment of crops according to the current label directions. The *Dimethoate Residues and Dietary Risk Assessment report* was first published in August 2011. Additional data and consideration of requests for alternative use patterns submitted to the APVMA since August 2011 have been assessed and incorporated into the *Dimethoate Residues and Dietary Risk Assessment report* (the Residues Report) as published 16 June 2016.

The dietary risk assessment follows the revision of the Acceptable Daily Intake (ADI) from 0.02 mg/kg bw/day to 0.001 mg/kg bw/day and establishment of an Acute Reference Dose (ARfD) of 0.02 mg/kg bw for dimethoate.

In conducting a dietary risk assessment, the exposures of different age groups within the population to dimethoate (and its breakdown product omethoate) are compared with the HBGVs set for exposure to dimethoate and its breakdown products, namely the ARfD and the ADI. Dietary exposures below these health standards are considered acceptable while those exceeding these health standards would be considered unacceptable. In evaluating the dietary exposure of dimethoate residues to consumers, it was necessary to examine the intake of foods that would potentially contain residues of dimethoate. The National Estimated Daily Intake (NEDI) and National Estimated Short-Term Intake (NESTI) calculations were undertaken in accordance with the World Health Organization (WHO)—United Nations Food and Agriculture Organization's (FAO) recommended guidelines as agreed with Food Standards Australia New Zealand (FSANZ).

The residues report considered residues of both dimethoate and also of its break down product omethoate which can be found in treated crops after the use of dimethoate. The relative toxicity of omethoate compared to dimethoate, in laboratory animal studies, was determined to be approximately three times more toxic than dimethoate (~3:1) following chronic (long-term) exposure and seven times more toxic than dimethoate (~7:1), following acute (short-term) exposure. In all of the dietary exposure assessments, calculations were made to account for the greater toxicity of omethoate than dimethoate.

Supported uses of dimethoate

The following use patterns that were previously on product labels remain acceptable from a residues (human health) perspective. Additional data or information has been submitted since August 2011 that was sufficient to support some use patterns that may had previously been assessed as having insufficient data in August 2011:

Supported use patterns	Comments
Asparagus pre-harvest	No change from August 2011
Avocado pre-harvest and post-harvest uses	Additional data provided, use supported
Bananas, post-harvest, Banana pre-harvest limited to control of banana aphid with concurrent plant destruction—grazing or supply of produce for human or animal consumption prohibited.	Post-harvest supported Note that the OHS report does not support the use to control banana aphid
Beans (green vegetable pre-harvest)	Added grazing WHP of 7 days
Beetroot, pre-harvest use with a 14 day withholding period	Withholding period increased to 14 days
Blackberries and raspberries, pre-harvest use	Additional data provided, use supported
Blueberries, pre-harvest uses	Additional data provided, use supported with 7 applications, 21–day re-treatment interval, 1– day WHP)
Capsicum, all pre-harvest uses	No change from Aug 2011
Cereals, including maize and sorghum (existing pre-harvest uses)	Additional data provided, use supported
Citrus pre-harvest uses and post-harvest uses	Additional data provided, use supported. Citrus that have received a pre-harvest treatment must not be given a post-harvest treatment
Cotton	Additional data provided, use supported WHP harvest 14 days Do not feed to livestock
Eggplant pre-harvest only	Additional data supplied for permit 12506 can be applied to the old label instructions with a 14 day WHP.
Litchi, lychee pre-harvest and post-harvest uses	No change from August 2011
Mango pre-harvest and post-harvest uses	No change from August 2011
Melons, all pre and post-harvest uses	Additional data provided, use supported
Pulses also known as grain legumes (adzuki bean, borlotti beans, chickpeas, cowpea, mung bean, navy bean, pigeon pea, lentils and soybean) existing pre-harvest uses	Additional data provided, all uses supported
Oilseeds—use for red-legged earth mite only	Limited to use at crop emergence only

Supported use patterns	Comments
Onions pre-harvest uses	No change from August 2011
Pastures, pasture seed crops, lucerne—use for red-legged earth mite only	Limited to use at crop emergence only
Peanuts	Additional data provided, use supported
Peas (green vegetable peas EXCEPT snow peas and sugar snap peas)	Added grazing WHP of 7 days
Potato and sweet potato, pre-harvest use	Withholding period increased to 14 days
Rhubarb pre-harvest uses	No change from August 2011
Seed dressings for lupins, peas,	Additional data provided, use supported
Strawberry runner production vegetative planting material only	DO NOT use on fruiting strawberries
Tropical, subtropical fruits inedible peel: post-harvest dipping or flood spray including post-harvest quarantine treatments: (specific fruits as listed on current labels, avocados, banana, cactus fruit, custard apple (includes cherimoya), feijoa, guava (inedible peel varieties ONLY), kiwifruit (chinese gooseberries) (inedible peel varieties ONLY), lychees (litchis), mangoes, pawpaw (papaya), passionfruit (includes banana–passionfruit), pomegranates, tamarillo) Note that as persimmon inedible peel varieties are no longer commercially grown this use pattern is not appropriate	Note that this list of uses is of those crops that were on existing labels Some permits list additional fruits not originally on labels for post-harvest dipping such as abiu, casimiroas, durian, mangosteen, rambutan, rollinia, santols, sapodillas, soursop, sweetsop/sugar apple, wax jambu.
Tomato (processing), pre-harvest use with a 21 day withholding period	Added 21 day withholding period
Tomatoes, large, field grown for fresh consumption, pre-harvest use with application prior to the commencement of flowering.	DO NOT apply after commencement of flowering
Turnip, pre-harvest use	Withholding period increased to 14 days
Zucchini all pre-harvest uses	No change from August 2011

Uses of dimethoate that are not supported

Some use patterns were assessed as being of unacceptable dietary risk and have not been permitted since October 2011. Additionally some of the uses that are currently permitted cannot be supported due to insufficient residues data. It is proposed that they be deleted from labels:

Use patterns NOT supported residues report	Comments
Banana all pre-harvest uses apart from plant destruction situation	Insufficient residues data
Berry fruit—all general berry fruit uses and currants	Restricted to specific berry fruit since October 2011 due to unacceptable dietary risks for particular fruit
Fruit—all general fruit uses	Restricted to specific fruit since October 2011 due to unacceptable dietary risks for particular fruit
Grapes (currently an interim pre-flowering use)	Insufficient residues data to support continued use on grapes pre-flowering. All other uses on grapes prohibited since October 2011 due to unacceptable dietary risk
Leucaena	Insufficient residues data
Oilseeds (except cotton and peanuts)—except for the early emergence red legged earth mite uses,	Insufficient data to support any uses after crop emergence
Pasture, pasture seed and fodder crops (except for the early emergence red legged earth mite uses)	Insufficient residues data
Post-harvest treatment of: Apples, apricots, capsicum, cherries, eggplant, figs, loquats, nectarines, peaches, pears, pepinos, plums, quinces, tomatoes and cherry tomatoes	Prohibited since October 2011 unacceptable dietary risk
Post-harvest treatment of chilli and persimmons	Insufficient residues data
Seed dressings for sesame, sunflowers canola seed dressing, linseed seed dressing	Insufficient residues data
Seed dressings for vetches, lucerne, clover (and subclover), linseed and canola.	Insufficient residues data
Stone fruit: • all post-harvest uses • all pre-harvest uses (currently an interim use up until petal fall for western flower thrip)	Insufficient residues data to support continued use prior to petal-fall. All other uses on stone fruit prohibited since October 2011 due to unacceptable dietary risk
Tropical, subtropical fruits edible peel all uses not supported: • babacos pre-harvest uses • carambolas (five corner) pre-harvest uses • all post-harvest uses	Prohibited since October 2011 unacceptable dietary risk

Use patterns NOT supported residues report	Comments
Tropical, subtropical fruits inedible peel—pre-harvest uses (other than avocado, litchi / lychee and mango) **not** supported for: abui, banana (food production uses), casimiroas (white sapote), custard apple (including cherimoya), passionfruit, pawpaw (papaya), santols, sapodillas (chikus), wax jambus)	Insufficient residues data to support continued use on any tropical/subtropical fruit except avocado, litchi and mango.
Vegetables general vegetable, leafy vegetable, root vegetable uses This includes currently permitted uses on: Globe artichoke, broccoli , drumhead cabbage, carrot, cauliflower, celery, chilli, parsnips, radish, snow peas, sugar snap peas and sweet corn	Restricted to specific vegetable since October 2011 due to unacceptable dietary risks for particular vegetables Insufficient residues data to support these currently permitted uses

Home garden use on food producing plants is not supported

Dimethoate was approved for use in the home garden on a number of crops. Owing to concerns over acute (short term) dietary exposure to omethoate residues identified in commercial situations, the use of dimethoate on food producing plants in the home garden has not been permitted since October 2011.

Acute dietary risks

The short-term dietary risks for all approved uses of dimethoate have been assessed against the ARfD that was established for dimethoate.

For these calculations, intakes are estimated on the basis of individual commodity or commodity groups. The NESTI is used to calculate the estimated dietary risk. This is calculated separately for children (ages 2–6 years old) and the general population. Dietary intakes exceeding the ARfD are not acceptable (i.e. >100% of the ARfD).

In October 2011, the APVMA suspended all dimethoate products and issued new instructions for use that mitigated acute dietary risks by either removing certain crop uses altogether or changing the use pattern to a modified use pattern that was assessed as acceptable.

The complete list of NESTI calculations are summarised in Table 81 in the Dimethoate Residues and Dietary Risk Assessment Report Updated (June 2016).

Table 7: Summary of NESTI calculations for existing dimethoate uses

Acute dietary exposure (NESTI) calculations				
Commodity	Residue for acute dietary exposure assessment (mg/kg)	% of ARfD		Outcome
		2–6 years	2+ years	
FB 0261 bilberry (foliar) (vaccinium berries)	12.5	40	10	Supported—caveats (see text section 7.5.1)
FB 0264 blackberries (foliar)	20	70	20	Supported
FB 0020 blueberries (foliar) (vaccinium berries)	12.5	40	10	Supported—caveats (see text section 7.5.1)
FB 0269 grapes (pre-harvest)	17.7	3000	1300	Not supported
FB 0269 grapes (foliar application pre flowering)	0.4	70	30	Insufficient data—phase out acceptable
FB 0272 raspberries, red, black	20	70	20	Supported
FB 0274 strawberries (pre-harvest)	9.5	450	115	Not supported
FB 0274 strawberry (runners)	0.08	5	1	Supported
FB 0021 currants (pre-harvest)	1.45	290	60	Not supported
FC 0001 citrus mandarins (post-harvest)	0.124	15	5	Supported
FC 0001 citrus lemons (pre-harvest)	0.49	50	5	Supported
FC 0001 citrus mandarins (pre-harvest)	0.48	70	20	Supported
FC 0001 citrus oranges (pre-harvest)	0.36	55	20	Supported
FC 0001 citrus oranges (post-harvest)	0.394	60	20	Supported
FI 0326 avocado (pre-harvest and post-harvest)	0.39	96.5	15	Supported
FI 0327 banana (post-harvest)	≤0.08 (assume all d)	10	5	Supported
FS 0247 peach (alternative GAP—foliar application at flowering)	≤0.08 (assume all o)	65	20	Insufficient data—phase out acceptable
FI 0332 custard apple (post-harvest)	0.18	60	20	Supported
FI 0343 litchi (post-harvest)	1.1	60	15	Supported

Acute dietary exposure (NESTI) calculations				
Commodity	Residue for acute dietary exposure assessment (mg/kg)	% of ARfD		Outcome
		2–6 years	2+ years	
FI 0343 litchi (foliar)	0.55	30	10	Supported
FI 0345 mango (foliar and post-harvest)	0.62	65	30	Supported
FI 0350 papaya (post-harvest)	0.15	70	15	Supported
FI 0353 pineapple (35-day WHP)	0.09	50	15	Supported
FP 0226 apple (pre-harvest)	3.02	510	160	Not supported
FP 0226 apple (post-harvest)	1.97	330	110	Not supported
FS 0013 cherries (post-harvest)	4.09	340	60	Not supported
FS 0013 cherries (foliar)	3.41	280	50	Not supported
FS 0013 cherries (alternative GAP—foliar application at flowering)	0.08	7	1	Insufficient data—phase out acceptable
FS 0014 plums (foliar)	1.59	200	70	Not supported
FS 0014 plums (alternative GAP—foliar application at flowering)	0.08	10	3	Insufficient data—phase out acceptable
FS 0245 nectarine (foliar)	3.51	510	220	Not supported
FS 0245 nectarine (alternative GAP—foliar application at flowering)	0.08	10	5	Insufficient data—phase out acceptable
FS 0247 peach (post-harvest)	1.6 (assumed all d)	250	95	Not supported
FS 0247 peach (foliar)	8.76	1400	520	Not supported
FS 0247 peach (alternative GAP—foliar application at flowering)	0.08	13	4	Insufficient data—phase out acceptable
FT 0305 olives (pre-harvest)	7.49	400	80	Not supported
FT 0305 olives for oil production only, 6 week WHP	0.11	<5	<1	Supported (permit)
FT 0307 persimmons (pre-harvest)	9.6	930	190	Not supported
GC 0080 cereal grains (STMR used)	0.08	5	<5	Supported
GC 0645 maize	<0.08	<5	<5	Supported

Acute dietary exposure (NESTI) calculations				
Commodity	Residue for acute dietary exposure assessment (mg/kg)	% of ARfD		Outcome
		2–6 years	2+ years	
GC 0651 sorghum	<0.08	<5	<5	Supported
SO 0691 cotton	0.4	<5	<5	Supported
SO 0697 peanut	0.014	<1	<1	Supported
SO 0088 oilseed (protected data—for product 56454)	0.154	<1	<1	Supported
SO 0088 oilseeds (application at crop emergence)	0.08	<1	<1	Supported
VA 0385 onion (pre-harvest)	1.64	80	40	Supported
VB 0421 broccoli	4.7	620	200	Not supported
VB 0421 broccoli (alternative GAP with 21 day WHP)	0.37	50	16	Insufficient data—phase out acceptable
VB 0402 brussels sprouts	2.77	105	35	Not supported
VB 0041 cabbage (drum head only and alternative GAP with 21 day WHP)	0.2	15	10	Insufficient data—phase out acceptable
VB 0404 cauliflower	4.24	450	170	Not supported
VB 0404 cauliflower (alternative GAP with 21 day WHP)	0.37	40	15	Insufficient data—phase out acceptable
VC 0424 cucumber (post-harvest)	4.28	350	120	Not supported
VC 0424 cucumber (foliar)	1.83	150	50	Not supported
VC 0431 zucchini (post-harvest)	3.61	385	110	Not supported
VC 0431 zucchini (foliar)	0.7	75	20	Supported
VC 0046 melons, except water melons (pre + post-harvest)	0.301	90	35	Supported
VC 0432 watermelons (pre-harvest and post-harvest)	0.301	90	90	Supported
VD 0070 pulses	0.848	10	5	Supported
VL 0464 silverbeet	5.84	270	160	Not supported
VL 0467 chinese cabbage	1.88	110	60	

Acute dietary exposure (NESTI) calculations				
Commodity	Residue for acute dietary exposure assessment (mg/kg)	% of ARfD		Outcome
		2–6 years	2+ years	
VL 0482 lettuce, head	8.24	380	215	
VL 0483 lettuce, leaf	2.86	130	75	
VL 0502 spinach	13.71	450	460	
VO 0440 eggplant (post-harvest)	6.12	810	510	Not supported
VO 0440 eggplant (foliar)	0.76	101	60	Not supported
VO 0440 eggplant (foliar—alternative GAP with 21 day WHP)	0.072	10	6	Supported (permit)
VO 0440 eggplant (foliar—alternative GAP with 14 day WHP)	0.361	50	30	Supported (permit can be returned to labels)
VO 0445 peppers, sweet (post-harvest)	4.57	220	95	Not supported
VO 0445 peppers, sweet (foliar)	1.09	50	25	Supported
VO 0444 peppers, chilli (post-harvest)	4.57	5	15	Insufficient data—phase out acceptable
VO 0444 peppers, chilli (foliar)	1.09	1	3	Insufficient data—phase out acceptable
VO 0447 sweet corn	0.57	80	20	Insufficient data—phase out acceptable
VO 0448 tomato (post-harvest)	1.8 (assumed all d)	200	80	Not supported
VO 0448 tomato (foliar)	3.32	370	150	Not supported
VO 0448 tomato (foliar—alternative GAP with 21 day WHP)	0.072	10	5	Supported
VP 0061 beans	1.31	30	15	Supported
VP 0063 peas	4.64	98	55	
VR 0494 radish	3.8	110	30	Not supported
VR 0494 radish (alternative GAP with 14 day WHP)	2.7	80	20	Insufficient data—phase out acceptable
VR 0506 turnip	0.8	20	10	Supported

Acute dietary exposure (NESTI) calculations				
Commodity	Residue for acute dietary exposure assessment (mg/kg)	% of ARfD		Outcome
		2–6 years	2+ years	
VR 0508 sweet potato	2.34	570	120	Not supported
VR 0508 sweet potato (alternative GAP with 14 day WHP)	0.15	40	10	Supported
VR 0574 beetroot	1.39	109	30	Not supported
VR 0574 beetroot (alternative GAP with 14 day WHP)	0.4	30	10	Supported
VR 0577 carrot	1.36	90	30	Not supported (see text Section 7.15.2)
VR 0577 carrot (alternative GAP with 14 day WHP)	0.47	30	10	Insufficient data—phase out acceptable
VR 0588 parsnip (alternative GAP with 14 day WHP)	0.47	40	10	Insufficient data—phase out acceptable
VR 0589 potato	2.34	340	130	Not supported
VR 0589 potato (alternative GAP with 14 day WHP)	0.15	20	10	Supported
VS 0620 artichoke, globe	1.77	110	50	Not supported
VS 0620 artichoke, globe (alternative GAP with 14 day WHP)	0.92	60	30	Insufficient data—phase out acceptable
VS 0621 asparagus	0.02	<5	<5	Supported
VS 0624 celery	4.31	290	85	Not supported
VS 0624 celery (alternative GAP with 21 day WHP)	0.56	40	10	Insufficient data—phase out acceptable
VS 0627 rhubarb	1.34	65	70	Supported
ML 0106 milks	0.008	5	<5	Supported
MM 0095 meat (mammalian)	0.008	<1	<1	Supported
MO 0105 edible offal (mammalian)	0.771	5	10	Supported
PE 0112 eggs	0.008	<1	<1	Supported
PM 0110 poultry meat	0.008	<1	<1	Supported
PO 0111 poultry, edible offal	0.008	<1	<1	Supported

The NESTI calculations are made in accordance with the deterministic method used by the JMPR[2] with 97.5th percentile food consumption data derived from the 1995 National Nutrition Survey of Australia. NESTI calculations are conservative estimates of acute exposure (24 hour period) to chemical residues in food.

As the application of dimethoate products to crops also results in residues of the more toxic compound, omethoate, the NESTIs were calculated for the combined intake of measured dimethoate and omethoate residues (assuming a relative acute toxicity of ~1:7).

Chronic dietary risks

Chronic dietary exposure to dimethoate was estimated by the NEDI calculation, which encompassed all registered and temporary uses of the chemical and the mean daily dietary consumption data derived from the 1995 National Nutrition Survey of Australia. The NEDI calculation is made in accordance with WHO Guidelines and is a conservative estimate of dietary exposure to chemical residues in food.

If the recommendations in this reconsideration are put into place the NEDI for the estimated combined intake of dimethoate and omethoate (assuming a relative chronic toxicity of ~1:3) is equivalent to <90% of the dimethoate ADI.

MRL recommendations

It is recommended that MRLs for both dimethoate and omethoate be amended once both reconsiderations have been finalised and the phase out period for any remaining uses has ended.

See Appendix C for a list of the recommended amendments to Table 1 and Table 4 of the APVMA MRL Standard.

Residue-related aspects of trade

As an outcome of these decisions it is not likely that residues observed in traded produce will be higher than those observed under the currently approved use patterns.

Use of dimethoate products in accordance with the proposed changes to label instructions is unlikely to unduly prejudice Australian trade as the risk is unchanged or less than has existed under previously registered uses for dimethoate.

[2] Joint FAO/WHO Meeting on Pesticide Residues (JMPR) published as: World Health Organization 2008. Dietary exposure assessment of chemicals in food: report of a Joint FAO/WHO Consultation. Annapolis Maryland, USA, 2–6 May 2005

4 PROPOSED RECONSIDERATION DECISIONS

On the basis of the evaluation of the submitted data and information, the following recommendations are made with regard to the continued approval of the active constituent dimethoate, registration of dimethoate products and label approvals in Australia.

4.1 Affirm approvals of the active constituent dimethoate

The APVMA is satisfied that, provided the conditions to which an approval is currently subject are complied with, the continued use of, or any other dealings with, the active constituent dimethoate would not be likely to have an effect that is harmful to human beings. The APVMA recommends that active constituent approvals listed in Table 9 be affirmed.

4.2 Amend the active constituent standard for dimethoate

The APVMA notes that the OCS has recommended that impurity limits be established for omethoate and isodimethoate in addition to the existing impurity limit for O,O,S-trimethyl phosphorodithioate (OOS–TMP).

The APVMA is proposing to add maximum impurity limits of 2 g/kg for omethoate and 3 g/kg for isodimethoate to the APVMA standard in line with the appropriate international standard, (the FAO Standard).

The APVMA also proposes to add the FAO Standard maximum limit of 2 g/kg for water to the APVMA Standard, on the basis that the control of water content is critical for the stability of dimethoate.

The APVMA does not propose to amend the current upper limit for the impurity O,O,S-trimethyl phosphorodithioate (OOS-TMP) of 5 g/kg.

The changes proposed are listed in full in Appendix D and submissions in response to this proposed change are invited.

4.3 Vary particulars of label approvals and affirm products with varied labels

The APVMA is not satisfied that the current labels of the products in Table 10 contain adequate instructions in relation to the criteria set out in section 5 of the Agvet Codes. However, the APVMA is satisfied that the conditions of label approval for these products can be varied in such a way that they contain adequate instructions in accordance with section 5 of the Agvet Codes

Agricultural products

The label of the agricultural products will be varied to conform to current labelling standards and the recommendations of the reconsideration once finalised.

A complete list of the affected products and labels is included Table 10 in Appendix A and a consolidated list of use patterns that are either supported, to be varied, to be deleted from labels or already deleted from labels is available in Table 14 in Appendix B.

4.4 Phase out periods

The APVMA also proposes to determine that subsection 81(3) is to apply in respect of the earlier approved version of labels that are proposed to be varied and to allow a period of one year for their continued supply. After that period all product that is supplied should bear the varied approved label.

Earlier approved labels that are currently suspended must not be supplied unless the additional instructions included in Permit PER13155 are firmly attached to the product container.

4.5 Proposed registration cancellations as an outcome of the reconsideration findings

The continued registration of emulsifiable concentrate (EC) products containing 100 or 300 g/L dimethoate for home garden use, is not supported, based on their high acute oral toxicity and moderate-severe skin and eye irritancy.

Therefore, the APVMA proposes that the registrations and label approvals for the products listed in Table 8 below be cancelled in accordance with Section 34AA of the Agvet Codes.

Table 8: Home garden products proposed for cancellation

Product number	Product name	Registrant	Label approval number
55272	Superway Dimethoate 300 Systemic Insecticide	Superway Garden Ag & Pest Products Pty Ltd	Home garden
58375	Surefire Orchard & Garden Insecticide	PCT Holdings Pty Ltd	Home garden
61916	Richgro Fruit Fly & Garden Insecticide	A. Richards Pty Ltd T/A Richgro Garden products	Home garden

4.6 Phase out periods for cancelled products

The APVMA proposes to determine that sections 45B and 45C of the AgVet Code are to apply in respect of the proposed cancellation of these products to allow a period of one year for their continued supply and use.

These products are currently suspended and must not be supplied unless the additional instructions '*DO NOT use on food producing plants in the home garden'* are firmly attached to product containers. The APVMA proposes that this same condition requiring the additional instructions should continue to apply during the phase out period.

4.7 Health-based guidance values

Acceptable daily intake (ADI)

The ADI has been amended from 0.02 mg/kg/day down to 0.001 mg/kg bw/day.

Acute reference dose (ARfD)

An ARfD for dimethoate has been established for the first time.at 0.02 mg/kg bw.

Poisons schedule

There are no changes are required to the current Schedule 6 listing for dimethoate products.

First-aid instructions

Existing first aid instructions for dimethoate as they appear in the First Aid Instruction and Safety Directions (FAISD) Handbook (as of May 2012) are as follows:

Concentration	Code	First Aid Instruction
Dimethoate (all concentrations)	m	If swallowed, splashed on skin or in eyes, or inhaled, contact a Poisons Information Centre (phone Australia 131126) or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed, activated charcoal may be advised. Give atropine if instructed.

There is no recommendation to amend these instructions and they should appear on the labels for all dimethoate products included in Schedule 6.

It is noted that the OCS had recommended that a cut off to Schedule 5 could be established for dimethoate in pressurised spray packs containing 0.03 per cent or less of dimethoate, with associated amended first aid instructions. However as this product is no longer registered, no further action is required.

Warning statements and general safety precautions

There were no changes required to the warning statements and general safety precautions recommended in the current FAISD Handbook.

Safety directions and personal protective equipment (PPE)

Amendments to existing safety directions and PPE

It is proposed that the following amended safety directions and PPE be included in product labels.

Code	Proposed Safety Directions
DIMETHOATE EC 400 g/L OR LESS	
130 131 132 133 190 207 211 180 210 211	Poisonous if absorbed by skin contact, inhaled or swallowed. Repeated minor exposure may have a cumulative poisoning effect. Will damage eyes and skin. Repeated exposure may cause allergic disorders. Avoid contact with eyes and skin.
279 280 281 290 292 293 294c 296 298	When opening the container and preparing spray wear cotton overalls buttoned to the neck and wrist, a washable hat, a PVC or rubber apron, elbow-length chemical resistant gloves, a face shield and impervious footwear.
279 282 (spray) (or dip for pre-plant and post-harvest dipping) 290 294c	When using the prepared spray (or dip for pre-plant and post-harvest dipping) wear elbow-length chemical resistant gloves
289 420 (vehicle mounted low pressure equipment) 290 292b 294c 300 307	If applying by hand by vehicle mounted low pressure equipment wear cotton overalls buttoned to the neck and wrist, elbow-length chemical resistant gloves and a half face-piece respirator with organic vapour/gas cartridge or canister
330 332 340 342 340 343 351 360 361 362 364 366	If clothing becomes contaminated with product remove clothing immediately. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use wash gloves, face-shield, respirator and contaminated clothing.

Delete entries

The safety directions and PPE instructions for:

- dimethoate wettable powder products (WP 88 g/Kg or less) are to be deleted as there were are no registered products of this type registered at the time of the OHS assessment and therefore a contemporary assessment of this product type has not been conducted.
- dimethoate home garden emulsifiable concentrate products (HG EC 100 g/L or less) are to be deleted as these products are too toxic for home garden use.

4.8 MRL standards

Arising from the assessment of data submitted to the reconsideration of dimethoate, changes to the MRL Standard are recommended to be made once any periods for the legal use of previous versions of varied or cancelled labels have ended.

These changes include the deletion of MRLs associated with the use patterns where there was insufficient residues data to support continued use. MRLs associated with use patterns that were assessed as being of unacceptable acute dietary risk and suspended in October 2011 have already been removed from the MRL standard.

Appendix C includes the list of the previous MRLs, the current MRLs and the recommended amendments to Table 1 and Table 4 of the APVMA MRL Standard.

APPENDICES

Appendix A: actives and products

Active constituent approvals proposed for affirmation

Table 9 : Active constituent approvals proposed for affirmation

Approval number	active constituent	Approval Holder
44043	Dimethoate	FMC Australasia Pty Ltd
44566	Dimethoate Manufacturing Concentrate	FMC Australasia Pty Ltd
54320	Dimethoate Manufacturing Concentrate	FMC Australasia Pty Ltd
65605	Dimethoate	Sinon Australia Pty Limited
66093	Dimethoate	Farmalinx Pty Ltd
66494	Dimethoate	Farmalinx Pty Ltd
67003	Dimethoate	Agrogill Chemicals Pty Ltd
80465	Dimethoate	Shandong Rainbow International Co., Ltd

Product registrations to be affirmed following variation of instructions for use

Table 10 : Product registrations to be affirmed following variation of instructions for use on approved labels

Product Number	Product name	Registration Holder	Product type Commercial or Home garden	Label approvals to be varied
32962	Nufarm Dimethoate Systemic Insecticide	Nufarm Australia Limited	Commercial	32962/104879
39239	Adama Dimethoate 400 Systemic Insecticide	Adama Australia Pty Limited	Commercial	39239/61011 39239/63189
49600 S	Saboteur Systemic Insecticide	Crop Care Australasia Pty Ltd	Commercial	49600/103296
51545	Chemag Dimethoate Insecticide	Imtrade Australia Pty Ltd	Commercial	51545/55601
55441	4Farmers Dimethoate 400 Systemic Insecticide	4 Farmers Australia Pty Ltd	Commercial	55441/107381
55495	Superway Dimethoate 400 Systemic Insecticide	Superway Garden Ag & Pest Products Products Pty Ltd	Commercial	55495/55441
55704	Conquest Dimethoate 400 Systemic Insecticide	Conquest Crop Protection Pty Ltd	Commercial	55704/60954
56454	Danadim Insecticide	FMC Australasia Pty Ltd	Commercial	56454/55384

Product Number	Product name	Registration Holder	Product type Commercial or Home garden	Label approvals to be varied
57860 S	Halley Dimethoate 400 Systemic Insecticide	Halley International Enterprise (Australia) Pty Ltd	Commercial	57860/0603
58374	Cropro Stalk Insecticide	PCT Holdings Pty Ltd	Commercial	58374/100973
59469 S	AW Dimethoate 400 Systemic Insecticide	Agri West Pty Limited	Commercial	59469/0609 59469/0105
62511 S	Titan Dimethoate 400 Systemic Insecticide	Titan Ag Pty Ltd	Commercial	62511/103865
63470 S	Country Dimethoate 400 Systemic Insecticide	Accensi Pty Ltd	Commercial	63470/1208
64309 S	Farmalinx Dimetholinx Insecticide	Farmalinx Pty Ltd	Commercial	64309/53035 64309/1007
65259	Rover Systemic Insecticide	Sipcam Pacific Australia Pty Ltd	Commercial	65259/55757
65260 S	Rogor Upgrade Insecticide	Cheminova Australia Pty Limited	Commercial	65260/50541
66538	ACP Dimethoate 400 Systemic insecticide	Australis Crop Protection Pty Ltd	Commercial	66538/55930
69555	Imtrade Dimethoate 400 EC Insecticide	Imtrade Australia Pty Ltd	Commercial	69555/61124
70165	Apparent Decimator 400 Insecticide	Apparent Pty Ltd	Commercial	70165/62662
80540	Genfarm Dimethoate 400 Insecticide	Landmark Operations Limited	Commercial	80540/101072

Product registrations to be cancelled

Table 11: Product registrations to be cancelled—currently suspended

Product number	Product name	Registration holder	Product type commercial or home garden
55272 S	Superway Dimethoate 300 Systemic Insecticide	Superway Garden Ag & Pest Products Pty Ltd	Home garden
58375 S	Surefire Orchard & Garden Insecticide	PCT Holdings Pty Ltd	Home garden
61916 S	Richgro Fruit Fly & Garden Insecticide	A. Richards Pty Ltd T/A Richgro Garden products	Home garden

Active approvals and product registrations initially included in the reconsideration—now discontinued

No further regulatory action is required as these approvals and registrations no longer in force

There are a number of active approvals and product registrations that were included in the reconsideration in 2004, which are no longer registered or approved. As such, there is no further regulatory action required.

Table 12: Active approvals included in the reconsideration no longer approved—no action required

Approval number	Active constituent name—no longer approved	Approval holder
~~44127~~	Dimethoate	BASF Australia Ltd
~~44281~~	Dimethoate	BASF Australia Ltd
~~44442~~	Dimethoate	Isagro Australia Pty Ltd
~~45924~~	Dimethoate	Farmoz Pty Limited
~~48012~~	Dimethoate	National Resources Pty Ltd
~~48174~~	Dimethoate	Rotam Australasia Pty Ltd
~~49020~~	Dimethoate Manufacturing Concentrate	Farmoz Pty Limited
~~52285~~	Dimethoate	Nufarm Australia Limited

Table 13: Products included in the reconsideration that are no longer registered – no action required

Product number	Product name—product no longer registered	Holder
~~32951~~	BASF Perfekthion EC 400 Systemic Insecticide	BASF Australia Ltd
~~32953~~	Chemspray Rogor Insecticide	Envirogreen Pty Ltd
~~32961~~	Hortico Rogor Sucking Insect Killer	Hortico (Aust) Pty Ltd
~~32963~~	Garden King Rogor 100 Systemic Insecticide	Envirogreen Pty Ltd
~~41070~~	CRG Systex Insecticide	Chemical Recovery Co Pty Ltd
~~48956~~	Richgro Garden Products Rogor Insecticide	A Richards Pty Ltd T/A Richgro Garden Products
~~49167~~	Summit Dimethoate Systemic Insecticide	Summit Agro Australia Pty Ltd
~~49833~~	Rotam Romethoate Systemic Insecticide	Rotam Australasia Pty Ltd
~~50342~~	Dimethomax Systemic Insecticide	Nufarm Australia Limited
~~51658~~	Sipcam Rogor Systemic Insecticide	Sipcam Pacific Australia Pty Ltd
~~53045~~	Agcare Biotech Dimethoate 400 Ec Systemic Insecticide	Agcare Biotech Pty Ltd
~~53783~~	Yates Rogor Insecticide	Arthur Yates & Co Limited
~~56887~~	United Farmers Unidime 400 Insecticide	United Farmers Cooperative Company Ltd
~~59001~~	Amgrow Insect and Mite Systemic Insecticide	Amgrow Pty Ltd
~~52673~~	Amgrow Systemic Insect and Mite Spray	Amgrow Pty Ltd

APPENDIX B: SUMMARY OF PROPOSED LABEL CHANGES

Note that some labels have variations in the layout (order of crops).

Proposed new restraint statements:

DO NOT apply by misting or fogging equipment

DO NOT apply with air blast spray equipment unless operators are protected by engineering controls such as enclosed cabs fitted with appropriate air filters

DO NOT use open mixing/loading systems for aerial application

DO NOT apply by handheld knapsack, backpack or motorised handheld equipment (Critical Comments ornamental farm and forest trees 310–400 mL/100L).

DO NOT apply by handheld knapsack or backpack equipment (Critical Comments citrus 150 mL/100 L use patterns)

Proposed changes to the direction for use table

Table 14: Agricultural products – Previous and proposed changes to the Directions for Use.

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
TREE AND VINE CROPS					
Abius	*Queensland fruit fly*	*Qld, WA only*	*75 mL/100 L*	*7*	*TO DELETE: not supported insufficient residues data provided*
Avocado	Queensland fruit fly		75 mL/100 L	7	SUPPORTED: re-entry period 2 days hand harvest once spray dried other activities
~~Babacos~~	~~Queensland fruit fly~~	Qld, WA only	~~75 mL/100 L~~	~~7~~	DELETED: this use prohibited since October 2011 unacceptable dietary risk
Banana	*Silvering thrips & mites*	*Qld, NSW, WA, NT only*	*75 mL/100 L*	*7*	*TO DELETE: not supported insufficient residues data provided*
	Paper wasps	*NSW, WA only*	*75 mL/100 L*	*7*	

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
	Banana fruit fly *Not on all labels*	*Qld, NSW, WA, NT only*	*75 mL/100 L*	*7*	
	Control of banana aphid (with plant destruction) not for human or animal consumption	*NSW, Qld only*	*100 mL/100 mL*	*-* *N/A*	*TO DELETE: OHS not Residues—not supported due to risk of unacceptable worker exposure during stem injection*
~~Carambolas (Five Corner)~~	~~Queensland fruit fly~~	~~Qld, WA only~~	~~75 mL/100 L~~	~~7~~	DELETED: this use prohibited since October 2011 unacceptable dietary risk
Casimiroas (White Sapote)	*Queensland fruit fly*	*Qld, WA only*	*75 mL/100 L*	*7*	*TO DELETE: not supported insufficient residues data provided*
Citrus fruit (except Meyer lemons, Seville oranges and Cumquats)	Queensland fruit fly	NSW, Vic, Qld, WA, NT only	75 mL/100 L (150 ml/100 L medfly NSW, WA)proposed deletion of this higher rate	7	SUPPORTED: additional residues data provided citrus that have received a pre-harvest treatment must not be given a post-harvest treatment Re-entry period hand harvest—4 days, other activities—once spray dried The 150 ml/L medfly use pattern would require a re- entry period of 9 days and the restraint 'DO NOT apply by knapsack'
	Mediterranean fruit fly	Vic, WA, NSW			
	Aphids, thrips	All states	75 mL/100 L		
	Bronze orange bug	NSW, Vic, Qld, SA, WA only	75 mL/100 L		
	Wingless grasshopper	All states	75 mL/100 L	7	
Custard apple	*Queensland fruit fly*	*Qld, WA, NT only*	*75 mL/100 L*	*7*	*TO DELETE: not supported insufficient residues data provided*

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Granadillas	*Queensland fruit fly*	*Qld, WA, only*	*75 mL/100 L*	*7*	*TO DELETE: not supported insufficient residues data provided*
Grapes	~~Queensland fruit fly~~	~~Qld, WA only~~	~~75 mL/100 L~~	~~7~~	DELETED: this use with 7 day WHP prohibited since October 2011 unacceptable dietary risk
	Aphids, thrips, jassids, mites (inc. spider mites)	*Qld, Vic, SA, WA, Tas only*	*75 mL/100 L*	~~7~~ *DO NOT use after flowering commences*	*TO DELETE: not supported insufficient residues data provided*
Litchis (lychees)	Litchi erinose mite Not on all labels		75 mL/100 L	7	SUPPORTED: proposed re-entry period all activities—once spray dried
Litchis (lychees) Pre-planting dip	Erinose mite Dip plants to disinfect before planting. Not on all labels		75 mL/100 L Dip.	- NA	
Mangoes	Queensland fruit fly	Qld, NSW, Vic, WA, NT only	75 mL/100 L	3 (some labels 7)	SUPPORTED: WHP of 3 days confirmed proposed re-entry periods fruit thinning—9 days hand harvest—4 days, other activities—once spray dried
	Mediterranean fruit fly	WA, Vic, NSW only			
Passionfruit	*Queensland fruit fly*	*Qld, NSW, Vic, WA, NT only*	*75 mL/100 L*	*7*	*TO DELETE: not supported insufficient residues data provided*
	Mediterranean fruit fly	*WA, Vic, NSW only*			
	Aphids	*NSW, WA only*			
Pawpaw (papaya)	*Queensland fruit fly*	*Qld, NSW, Vic, WA, NT only*	*75 mL/100 L*	*7*	*TO DELETE: not supported insufficient*

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
	Mediterranean fruit fly	*WA, Vic, NSW only*			*residues data provided*
	Cucumber fly	*Qld, WA only*			
~~Pome fruit (apples, pears, quinces, not loquats)~~	~~Queensland fruit fly,~~	~~NSW, WA, Qld, Vic only~~	~~75 mL/100 L 150 mL/100 L (higher rate NSW only)~~	~~7~~	DELETED: this uses not supported and have been prohibited since October 2011
	~~Mediterranean fruit fly~~	~~NSW, WA, Vic only~~			
	~~Woolly aphids~~	~~NSW, Vic, SA, Tas, WA only~~	~~75 mL/100 L~~		
	~~Wingless grasshoppers, thrips, aphids~~	~~All States~~	~~75 mL/100 L~~		
Santols	Queensland fruit fly	Qld, WA only	75 mL/100 L	7	TO DELETE: not supported insufficient residues data provided
Sapodillas (chikus)	Queensland fruit fly	Qld, WA only	75 mL/100 L	7	TO DELETE: not supported insufficient residues data provided
Stone fruit (cherries, nectarines, peaches, plum, not apricots or early peach varieties) Currently to be used before petal fall only	~~Queensland fruit fly,~~	~~NSW, SA, WA, Vic, Qld only~~	~~75 mL/100 L~~	~~7~~ - *Currently DO NOT use after petal fall*	DELETED: the use of dimethoate on stone fruit after petal fall has been prohibited since October 2011 due to unacceptable dietary risks
	~~Mediterranean fruit fly~~	~~NSW, Vic, WA only~~			
	Aphids, thrips, wingless grasshoppers	*All states*	*75 mL/100 L*		*TO DELETE: not supported insufficient residues data provided*
Wax jambus	*Queensland fruit fly*	*Qld, WA only*	*75 mL/100 L*	*7*	*TO DELETE: not supported insufficient residues data provided*

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Fruit and vegetable crops proposed re-entry period all activities—once spray dried					
Berry fruit (inc. blackberries, blueberries, ~~currants, mulberries~~, raspberries, ~~strawberries~~) Strawberries for runner production only	Aphids, thrips, jassids, spider mite, redlegged earth mite,	All states	75 mL/100 L or 800 mL/ha	7	SUPPORTED: additional data provided for blackberries, raspberries, bilberries, blueberries and other vaccinium berries) ONLY. Retreatment interval of 3 weeks (21 days). Proposed re-entry period all activities—once spray dried DELETED: the use of dimethoate on other berries such as currants, mulberries has been prohibited since October 2011
	Strawberry bug, Rutherglen bug	Qld, Vic, SA, WA, Tas only			
~~Strawberries from separate listing and from the general Berry use~~ Strawberries for runner production only	Strawberry bug, Rutherglen bug	Qld, Vic, SA, WA, Tas only	75 mL/100 L or 800 mL/ha	~~7 or~~ ~~1~~ Current N/A DO NOT use on fruiting strawberries	DELETED: the use of dimethoate on strawberries (except strawberry runners) is not supported and has been prohibited since October 2011 acute dietary concerns SUPPORTED: the use of dimethoate on strawberries (runner production—vegetative planting material only) is supported. Re-entry period all activities—once spray dried
	Aphid spider mites and/or thrips,	All states	75 mL/100 L		
	Queensland fruit fly, wingless grasshopper	NSW only			

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
Blueberries (and other vaccinium berries including bilberries)	Queensland fruit fly	NSW, WA only	75 mL/100 L or 750 mL/ha	1	SUPPORTED: additional data provided. Supported with the additional instructions regarding retreatment intervals. Proposed re-entry period all activities—once spray dried
~~Vegetables (general) (includes legume, fruiting, cucurbit, leafy stalk, stem, cole, root, bulb and tuber vegetables)~~	~~Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper~~		~~75 mL/100 L or 750–800 mL/ha~~	~~7~~ ~~(1 cucurbits)~~	DELETED: this general vegetable use is not supported and has been prohibited since October 2011. This general vegetable use has been replaced by the specific crop instructions below.
~~Leafy vegetables (cole crops, lettuce, silver beet~~ *celery)*	~~Aphids, thrips, jassids~~		~~75 mL/100 L~~	~~7~~	DELETED: this general leafy vegetable use is not supported and has been prohibited since October 2011. See below for celery with a 21–day WHP—not supported.
Beetroot, *celery,* ~~lettuce, silverbeet~~	Leafmining fly	NSW, WA only	750–800 mL/ha or 75 mL/100 L	7	DELETED: the lettuce and silverbeet use is not supported and has been prohibited since October 2011. See below for beetroot 14–day WHP (supported) and celery 21–day WHP (not supported)

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
~~Cucurbits including cucumber~~, zucchini, ~~squash~~, melons, ~~pumpkins, chokos, marrow, gherkins and others~~	~~Aphids, thrips, green vegetable bug, jassids, cucumber fly~~		~~75 mL/100 L or 750 mL/ha~~	~~1 day~~	DELETED: this general cucurbit use is not supported and has been prohibited since October 2011. See below for zucchini and melons. Supported with 7–day WHP for melons.
~~Root vegetables~~	~~Thrips, jassids, aphids, redlegged earth mite~~		~~75 mL/100 L~~	~~7~~	DELETED: this general root vegetable use has been prohibited since October 2011. See below for beetroot, carrots, onions, parsnips, potatoes, radish, sweet potatoes and turnip ONLY
Artichoke (globe) previous general vegetable use	*Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper*	*All states*	*75 mL/100 L or 750–800 mL/ha*	*7*	*TO DELETE: not supported insufficient residues data provided*
Asparagus	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha	7	SUPPORTED: proposed re-entry period of once spray dried for all activities
Beans (green vegetable)	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, spider mite, bugs,	All states	75 mL/100 L or 750–800 mL/ha	7 days H October 2011 added grazing withhold of 7–days G	SUPPORTED: added grazing withholding period of 7–days to existing harvest WHP of 7–days proposed re-entry period all activities—once spray dried
	Bean fly	All states	75 mL/100 L or 750–800 mL/ha		
	Cow pea aphid	NSW, WA only	350–650 mL/ha		
	Redlegged earth mite	NSW, Vic, SA, WA, Tas only	750–800 mL/ha		
	Wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha		

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
Beetroot Previous general vegetable or root vegetable uses as applicable to beetroot	Leafmining fly	NSW, WA only	750–800 mL/ha or 75 mL/100 L	Was 7 now 14 days	SUPPORTED: WHP increased to 14–days Proposed re-entry period all activities—once spray dried
	Redlegged earth mite	NSW, Vic, SA, Tas, WA only	75 mL/100 L		
	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, redlegged earth mite, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha		
Broccoli	*Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper*	*All states*	*75 mL/100 L or 750–800 mL/ha*	~~7~~ *Currently 21 days*	*TO DELETE: not supported insufficient residues data provided*
Cabbage previous general vegetable use. Now drumhead varieties only	*Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper*	*All states*	*75 mL/100 L or 750-800 mL/ha*	~~7~~ *Currently 21 days*	*TO DELETE: not supported insufficient residues data provided*
Carrot previous root vegetable uses and general vegetable uses	*Thrips, jassids, aphids, redlegged earth mite*	*All states*	*75 mL/100 L*	~~7~~ *Currently 14–days*	*TO DELETE: not supported insufficient residues data provided*
	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper		*75 mL/100 L or 750–800 mL/ha*		
Capsicum	Aphids, thrips, green vegetable bug, jassids,	All states	75 mL/100 L	3 days Some labels had listed as 7–days	SUPPORTED: WHP of 3–days supported Proposed re-entry period all activities—once spray dried
	Cucumber fly,	NSW, WA only	75 mL/100 L		
	Fruit fly	NSW, Qld, WA only	75 mL/100 L or 750 mL/ha		
	from previous general vegetable use: mites, leaf hoppers, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha		
Cauliflower	*Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper*	*All states*	*75 mL/100 L or 750–800 mL/ha*	~~7~~ *Currently 21–days*	*TO DELETE: not supported insufficient residues data provided*

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Celery	*Leafmining fly*	*NSW, WA only*	*750–800 mL/ha or 75 mL/100 L*	~~*7*~~ *Currently 21–days*	*TO DELETE: not supported insufficient residues data provided*
	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	*All states*	*75 mL/100 L*		*TO DELETE: not supported insufficient residues data provided*
Chilli (chilli peppers) previous general vegetable uses	*Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper*	*All states*	*75 mL/100 L or 750–800 mL/ha*	~~*7*~~ *Currently 3 days*	*TO DELETE: not supported insufficient residues data provided*
Eggplant previous general vegetable uses can be restored with WHP14 d	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha	~~7~~ 14 days	SUPPORTED: Currently use on eggplants is not permitted. However additional data provided for WHP of 14 days supports use. Proposed re-entry period all activities - once spray dried
Melons including watermelons previous cucurbit uses:	Cucumber fly	NSW, WA only	75 mL/100 L or 750 mL/ha	1 **to be changed to 7 days**	**SUPPORTED:** WHP to be increased to 7– days, in line with the new residue data from both pre and post-harvest treatment. Proposed re-entry period all activities—once spray dried
	Aphids, thrips, green vegetable bug, jassids,	All states			
Onions Includes general vegetable and root vegetable uses	Redlegged earth mite	NSW, Vic, SA, Tas, WA	75 mL/100 L	7 days	**SUPPORTED:** No change to WHP of 7– days proposed re- entry period all activities—once spray dried
	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha		
Parsnips *Includes general vegetable and*	*Redlegged earth mite*	*NSW, Vic, SA, Tas, WA*	*75 mL/100 L*	~~*7 days*~~ *Currently*	*TO DELETE: not supported insufficient*

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
root vegetable uses	*Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper*	*All states*	*75 mL/100 L or 750–800 mL/ha*	*14–days*	*residues data provided*
Peas (green vegetables **not supported for snow peas or, sugar snap peas**)	Spider mite, thrips, leafhoppers, jassids, green vegetable bug, aphids, bugs, mites, bean fly	All states	75 mL/100 L or 800 mL/ha	7 days H October 2011 Added grazing withhold of 7–days G	SUPPORTED: Added grazing withholding period to existing harvest WHP of 7– days DO NOT graze or cut for stock food for 7– days after application Proposed re-entry period all activities—once spray dried *TO DELETE: snow peas or, sugar snap peas Insufficient data to support use of this class of pea*
	Cow pea aphid	NSW, WA only	350–650 mL/ha		
	Redlegged earth mite	NSW, Vic, SA, Tas, WA only	800 mL/ha		
	Additional pests from the general vegetable use: Leaf hoppers, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha		
Potatoes and sweet potatoes	Thrips, jassids, aphids, redlegged earth mite	All states	75 mL/100 L or 750–800 mL/ha	~~7 days~~ Currently 14–days	SUPPORTED: WHP increased to 14–days DO NOT harvest for 14–days after application. Proposed re-entry period all activities—once spray dried
	Additional pests from the previous general vegetable use: mites, leaf hoppers, green vegetable bugs, wingless grasshopper				
Radish *Includes general vegetable and root vegetable uses*	*Redlegged earth mite*	*NSW, Vic, SA, Tas, WA*	*75 mL/100 L*	*~~7 days~~* *Currently 14–days*	*TO DELETE: not supported insufficient residues data provided*
	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	*All states*	*75 mL/100 L or 750–800 mL/ha*		
Rhubarb Includes general vegetable uses	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha	7–days	SUPPORTED: proposed re-entry period all activities—once spray dried

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Sweetcorn from the general vegetable use	*Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper*	*All states*	*75 mL/100 L or 750–800 mL/ha*	*7–days Currently 7–days H and 7–days G*	*TO DELETE: not supported insufficient residues data provided*
Tomatoes (for processing) uses from tomato uses and previous general vegetable uses as applicable.	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha	~~7–days~~ Currently 21–days	SUPPORTED: WHP increased from 7–days to 21–days TO DELETE reference to use of MISTING machines (OHS risk) Proposed re-entry period all activities— once spray dried
	Queensland fruit fly,	Qld, NSW, Vic, WA only	75 mL/100 L or 750 mL/ha		
	Mediterranean fruit fly	WA, NSW, Vic only			
	Tomato mite,	NSW, SA, Tas, Vic, WA only	60 mL/100 L		
	Bryobia mite	SA, Vic, WA, Tas only			
~~Tomatoes, (large, field grown for fresh consumption) all uses after flowering deleted~~	~~Queensland fruit fly,~~	~~Qld, NSW, Vic, WA only~~	~~75 mL/100 L or 750 mL/ha~~	~~7–days~~	DELETED: as the instructions are not to apply after flowering the Queensland fruit fly and Mediterranean fruit fly uses are to be deleted
	~~Mediterranean fruit fly~~	~~WA, NSW, Vic only~~			
Tomatoes, (large, field grown for fresh consumption) Uses prior to commencement of flowering retained	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha	~~7–days~~ DO NOT apply after flowering	SUPPORTED: WHP DO NOT apply after commencement of flowering. DO NOT USE on tomatoes grown in covered or protected situations such as glasshouses, green houses or plastic tunnels. DO NOT USE on cherry, grape or mini tomatoes Proposed re-entry period all activities—once spray dried
	Tomato mite,	NSW, SA, Tas, Vic, WA only	60 mL/100 L		
	Bryobia mite	SA, Vic, WA, Tas only			

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
Turnip Previous general vegetable and root vegetable uses as applicable	Redlegged earth mite	NSW, Vic, SA, Tas, WA	75 mL/100 L	7 days Currently14 days	SUPPORTED: WHP increased to 14 days Proposed re-entry period all activities—once spray dried
	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha		
Zucchini previous Cucurbit uses as applicable Previous general vegetable uses as applicable	Cucumber fly	NSW, WA only	75 mL/100 L or 750 mL/ha	1	SUPPORTED: WHP of 1–day after application supported proposed re-entry period all activities— once spray dried
	Aphids, thrips, green vegetable bug, jassids,	All states			
	Aphids, thrips, jassids, mites, leaf hoppers, green vegetable bugs, wingless grasshopper	All states	75 mL/100 L or 750–800 mL/ha		
Field and pasture crops proposed re-entry period all activities—once spray dried					
Adzuki beans	Thrips	All states some labels have restricted states	800 mL/ha or 75 mL/100 L	14 H Since October 2011 14 H and 14 G	SUPPORTED: additional residues data provided, ongoing use supported for pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials
	Leafhoppers, bean fly, bean blossom thrips, green peach aphid		800 mL/ha or 75 mL/100 L		
	Aphids(some labels exclude green peach aphid from this lower rate), mirid bugs		500 mL/ha		
Beans (field beans not green vegetable)	Aphids, thrips, leafhoppers(inc jassids) mites (inc. spider mites), bugs (inc. green vegetable bug), bean fly redlegged earth mite	All states some labels have restricted states	75 mL/100 L or 800 mL/ha	~~7 Harvest~~ ~~1 Grazing~~ Since October 2011 14 H and 14 G	SUPPORTED: Additional residues data provided, ongoing use supported for pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials Proposed re-entry period all activities—once spray dried
Borlotti beans not separately listed on all labels	Thrips	All states	800 mL/ha or 75 mL/100 L		
	Bean fly, leafhoppers		800 mL/ha or 75 mL/100 L		
	Aphids, lucerne bugs, mirid bugs		500 mL/ha		
	Redlegged earth mite		85 mL/100 L		

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Canola included with oilseeds in most labels	Redlegged earth mite	Vic, Tas, SA, diff rates for WA, NSW	40–85 mL/100 L	14 H Since October 2011 14 H and 14 G	SUPPORTED for use on red legged earth mite at crop emergence only: Proposed re-entry period all activities - once spray dried
Cereals	Lucerne flea	Vic, Tas, SA, NSW, WA only	55-85 mL/ha	28 H ~~1 G~~ Since October 2011 28 H and 14 G	SUPPORTED: additional data provided. WHP of 4–weeks harvest and 14–days grazing *DELETE reference to use of MISTING machines (OHS risk)* Proposed re-entry period all activities— once spray dried
	Wingless grasshopper	All states	75 mL/100 L or 750 mL/ha		
	Brown wheat mite	Qld, WA only	90 mL/ha		
	Blue oat mite	Qld, NSW, WA only	90 mL/ha		
	Leafhoppers, cereal aphid	All states	500 mL/ha		
	Redlegged earth mite	WA, Vic, Tas, SA NSW	55–85 mL/ha		
	Redlegged earth mite higher rate	WA, Vic, Tas, SA, NSW only	200 mL/ha		
Chickpeas not specifically listed on all labels included in grain legumes	Thrips	All states some labels have restricted states	800 mL/ha or 75 mL/100 L	14 H Since October 2011 14 H and 14 G	SUPPORTED: additional residues data provided, ongoing use supported for pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials Proposed re-entry period all activities—once spray dried
	Leafhoppers, bean fly, bean blossom thrips, green peach aphid		800 mL/ha or 75 mL/100 L		
	Aphids (some labels exclude green peach aphid from this lower rate), mirid bugs		500 mL/ha		
Cotton	Bugs (inc. green vegetable bugs, green mirids, apple dimpling bug, brown smudge bug, broken-backed bug, Rutherglen bug)	(Qld) NSW, WA only	340–500 mL/ha	14 H Since October 2011 14 H and grazing not	SUPPORTED: Additional residues data provided. This use modified October 2011 to add DO NOT Feed

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
	Thrips, leafhoppers, jassids	Qld, NSW, WA only	300–375 mL/ha	permitted	cotton fodder, stubble or trash to livestock Proposed re-entry period all activities—once spray dried
	Wingless grasshopper	Qld, NSW, WA only	750 mL/ha or 75 mL/100 L		
	Aphid, spider mites (inc red spider, twospottted mite)	Qld, NSW, WA only	350–500 mL/ha		
Cowpea	Thrips	All states some labels have restricted states	800 mL/ha or 75 mL/100 L	14 H Since October 2011 14 H and 14 G	SUPPORTED: additional residues data provided, ongoing use supported for pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials Proposed re-entry period all activities—once spray dried
	Leafhoppers, bean fly, bean blossom thrips, green peach aphid		800 mL/ha or 75 mL/100 L		
	Aphids (some labels green peach aphid), mirid bugs		500 mL/ha		
Grain legumes	Spider mite, thrips, jassids, green vegetable bug, aphids, bean fly	Qld, Vic, SA, WA Tas only	75 mL/100 L or 800 mL/ha		
	Redlegged earth mite	Vic, SA, Tas	75 mL/100 L or 800 mL/ha		
	Lucerne flea	WA only	85 mL/100 L		
Lentils in addition to use patterns listed under grain legumes	Redlegged earth mite	All states Some labels list NSW, ACT, WA only	90 mL/ha or some labels Vic, SA, Tas 75 mL/100 L or 800 mL/ha	~~7 H~~ since October 2011 14 H and 14 G	
Leucaena	*Leucaena psyllid*	*Qld, WA only*	*340 mL/ha*	*1 Grazing*	*TO DELETE: Not supported insufficient residues data provided*
Lucerne	*Spotted alfalfa aphid, blue green aphid,*	*Qld, NSW, Vic WA SA Tas*	*150 mL/ha* *150–225 mL/ha (WA)* *250–375 mL/ha (SA)* *375 mL/ha (Tas)*	~~*1 G up to 250 mL/ha*~~ ~~*7 G for 250mL/ha and higher*~~	SUPPORTED FOR USE ON RED LEGGED EARTH MITE AT CROP EMERGENCE ONLY. Pastures ;grazing withholding period:
	Pea aphid	*NSW Vic, WA only*	*150 mL/ha*	*Since Oct 2011*	

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
	Leaf hoppers (jassids)	*Qld, Vic, Tas, SA, WA only*	*350 mL/ha*	*14 G*	not required when used as directed (DO NOT use after crop emergence) TO DELETE ALL OTHER USES: not supported insufficient residues data provided *Lucerne flea can be considered for support if there is evidence that it can be restricted to treatment at crop emergence only*. Proposed re-entry period all activities - once spray dried
	Wingless grasshopper	*All states*	*75 mL/100 L or 750 mL/ha*		
	Lucerne flea, Redlegged earth mite	NSW high, Vic, Tas, SA, WA only	55–85 mL/ha (40-55 mL/ha WA)		
	Blue oat mite	*NSW, WA only*	*90 mL/ha*		
	Bean fly	*Vic, Tas, SA, WA only*	*340 mL/ha*		
Lupins listed separately, grouped with adzuki beans Additional uses listed under grain legumes	Thrips	All states Some labels have restricted states	800 mL/ha or 75 mL/100 L	14 H Since October 2011 14 H and 14 G	SUPPORTED: additional residues data provided, ongoing use supported for pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials Proposed re-entry period all activities—once spray dried
	Blue-green aphid, cow pea aphid mirid bugs		500 mL/ha		
	Green peach aphid		800 mL/ha		
	Aphids, mirid bugs		500 mL/ha		
Maize also see cereals	Maize leafhopper, thrips	Qld, WA only	500 mL/ha	~~28 H~~ ~~1 G~~ Since October 2011 28 H and 14 G	SUPPORTED: additional residues data provided proposed re-entry period all activities—once spray dried
Mung bean in addition to uses under grain legumes	Thrips	All states Some labels have restricted	800 mL/ha or 75 mL/100 L	~~7 H~~ Since October 2011 14 H and	SUPPORTED: additional residues data provided, ongoing use supported for
	Bean fly, leafhoppers		800 mL/ha or 75 mL/100 L		

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
	Aphids, mirid bugs, lucerne bugs	states	500 mL/ha	14 G	pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials Proposed re-entry period all activities—once spray dried
Navy bean in addition to uses listed under grain legumes	Thrips Bean fly, leafhoppers Aphids, mirid bugs lucerne bugs	All states Some labels have restricted states	750–800 mL/ha or 75 mL/100 L 800 mL/ha or 75 mL/100 L 500 mL/ha	~~7 H~~ Since October 2011 14 H and 14 G	SUPPORTED: Additional residues data provided, ongoing use supported for pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials Proposed re-entry period all activities—once spray dried
Oil seeds (inc. mustard, linseed, poppy, canola, safflower, sunflower) supported for use at crop emergence only	Redlegged earth mite *Lucerne flea, Lucerne flea can be considered for support if there is evidence that it can be restricted to treatment at crop emergence only*.	WA, NSW, SA, Vic, Tas rates vary	40–55 mL/ha 55–85 mL/ha	14 H Since October 2011 14 H and 14 G	SUPPORTED FOR USES AT CROP EMERGENCE ONLY: insufficient residues data provided to the reconsideration of dimethoate. WHP for Oilseeds (other than peanut and cotton): Not required when used as directed (DO NOT use after crop emergence) *OHS—DELETE reference to use of misters* Proposed re-entry period all activities—once spray dried

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Oil seeds (inc. *mustard, linseed, poppy, canola, safflower, sunflower*) all other uses after crop emergence COTTON AND PEANUTS ONLY	Green vegetable bug, jassids, leafhoppers	All states	350 mL/ha	14 H Since October 2011 peanuts 14 H and 14 G cotton 14 H N/A G	SUPPORTED: cotton and peanut only additional residues data provided. Peanuts 14–day harvest and grazing WHPs Cotton 14–day harvest WHP with no grazing allowed DO NOT feed cotton fodder, stubble or trash to livestock
	Wingless grasshopper	All states	750 mL/ha or 75 mL/100 L		
Pasture, pasture seed and forage crops (inc. clover, medics, cereals, lucerne, legumes for animal feed) at crop emergence only	*Lucerne flea,* Redlegged earth mite		55–85 mL/ha	~~1 G if less than 250 mL/ha~~ ~~7 G if 250 mL/ha or more~~ Now 14 G	SUPPORTED FOR USE ON RED LEGGED EARTH MITE AT CROP EMERGENCE ONLY: insufficient residues data provided to the reconsideration of dimethoate. Grazing withholding period: Not required when used as directed (DO NOT use after crop emergence) Proposed re-entry period all activities—once spray dried
	Redlegged earth mite		*250 mL/ha*		
	Blue oat mite		*90 mL/100 L*		
	Spotted alfalfa aphid, blue green aphid	*NSW, Qld, Vic, WA, Tas*	*150 mL/ha (Qld, NSW, Vic)* *375 mL/ha (Tas)* *150–225 mL/ha (WA)*		
	Blue green aphid	*SA*	*375 mL/ha*		
	Pangola aphids		*190 mL/ha*		
	Wingless grasshopper		*75 mL/100 L or 750 mL/ha*		
Peas (field peas not green vegetable) uses additional to those listed under grain legumes	Aphids, thrips, leafhoppers(inc jassids) mites (inc. spider mites), bugs (inc. green vegetable bug), bean fly redlegged earth mite	All states some labels have restricted states	75 mL/100 L or 800 mL/ha	~~7 H~~ ~~1 G~~ Since October 2011 14 H and 14 G	SUPPORTED: additional residues data provided, ongoing use supported for pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Peanuts	Aphids, jassids, thrips, green vegetable bug, peanut mite	NSW, Qld, WA	340–350 mL/ha	7 Since Oct 2011 14 H and 14 G	SUPPORTED: additional residues data provided, with 14–day harvest and grazing WHPs to be maintained
Pigeon pea uses in addition to those listed under grain legumes	Thrips, between pre-bloom (just before bud formation) and pod initiation	All states Some labels have restricted states	800 mL/ha or 75 mL/100 L	14 Since October 2011 14 H and 14 G	SUPPORTED: additional residues data provided, ongoing use supported for pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials Proposed re-entry period all activities—once spray dried
	Leafhoppers, bean fly, bean blossom thrips, green peach aphid		800 mL/ha or 75 mL/100 L		
	Aphids(some labels exclude green peach aphid from this lower rate), mirid bugs		500 mL/ha		
Sesame (also see oilseed uses)	*Aphids*	*All states*	*500 mL/ha*	*14* *Since October 2011* *14 H and* *14 G*	*TO DELETE: not supported for uses after crop emergence insufficient residues data provided to the reconsideration of dimethoate*
Sorghum (also see cereal uses)	Aphids	Qld, WA only	500 mL/ha	28 H ~~1 G~~ Since October 2011 14 G	SUPPORTED: additional residues data provided Proposed re-entry period all activities—once spray dried

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Soybean uses in addition to those listed under grain legumes	Green vegetable bug, jassids	All states Some labels restricted states	340 mL/ha	~~7~~ Since October 2011 14 H and 14 G	**SUPPORTED:** additional residues data provided, ongoing use supported for pulses and other grain legumes with 14–day harvest and grazing WHPs and a minimum 14–day retreatment interval in line with the GAP used in the trials Proposed re-entry period all activities—once spray dried
Sunflower	*Thrips, twospotted mite*	*Qld, WA only*	*800 mL/ha*	*14 H* *Since October 2011* *14 H and 14 G*	*TO DELETE: not Supported For Uses After Crop Emergence insufficient residues data provided to the reconsideration of dimethoate*
	Green vegetable bug, jassids	*NSW, SA, WA, Tas, Qld only*	*340 mL/ha*		
Tobacco	Lucerne flea, redlegged earth mite	NSW, ACT, WA only	80 mL/100 L	N/A	If still used proposed re-entry period all activities—once spray dried
POST-HARVEST DIPPING					
~~Cherries~~	~~Queensland fruit fly~~	~~NSW, WA only~~	~~100 mL/100 L water~~	~~NR~~	DELETED: post-harvest dipping of cherries has been prohibited since October 2011 due to unacceptable dietary risks.
	~~Fruit fly~~	~~WA, Vic only~~	~~50 mL/100 L water~~	~~NR~~	
Avocados	Queensland fruit fly	NSW, WA only	100 mL/100 L water	NR	SUPPORTED rehandling period: after the product solution has dried.
Banana	Fruit fly	NSW, WA only	50 – 75 mL/100 L water	NR	

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
Chinese gooseberries (kiwifruit) since October 2011 inedible peel varieties ONLY	Queensland fruit fly	NSW, WA only	100 mL/100 L water	NR	SUPPORTED inedible peel varieties ONLY Rehandling period: after the product solution has dried.
Custard apple	Queensland fruit fly	NSW, WA, NT only	100 mL/100 L water	NR	SUPPORTED rehandling period: after the product solution has dried.
Lychees (litchis) since October 2011–inedible peel varieties ONLY	Queensland fruit fly	NSW, WA only	100 mL/100 L water	NR	SUPPORTED inedible peel varieties ONLY Rehandling period: after the product solution has dried.
Mangoes, pawpaw, passionfruit	Queensland fruit fly, Mediterranean fruit fly	NSW, WA only	100 mL/100 L water	NR	SUPPORTED rehandling period: after the product solution has dried.
Persimmons since October 2011 (American —inedible peel varieties ONLY)	*Queensland fruit fly*	*NSW, WA only*	*100 mL/100 L water*	*NR*	*DELETE: based on advice that ALL current commercial varieties are edible peel*
POST-HARVEST QUARANTINE DIPS					
~~Apples*, apricots,* capsicum, cherries, eggplant, ,figs, loquats, nectarines, peaches, pears, pepinos, plums, quinces, tomatoes and cherry tomatoes~~	~~Queensland fruit fly~~	~~Qld, NSW,NT, WA only~~	~~100 mL/100 L water~~	~~NR~~	DELETED: The post-harvest dip uses on the following crops have been prohibited since October 2011 due to unacceptable dietary risks: apples and apricots capsicums, cherries and cherry tomatoes, figs, loquats, nectarines, peaches, pears, pepinos, plums, quinces and tomatoes
~~Cherries,~~	~~Queensland fruit fly~~	~~WA, Vic only~~	~~50 mL/100 L water~~	~~NR~~	

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Chilli,	*Queensland fruit fly* *Mediterranean fruit fly*		*100 mL/100 L water*	*NR*	*TO DELETE: not supported insufficient residues data provided to the reconsideration of dimethoate.*
Persimmons Since October 2011 (American —inedible peel varieties ONLY)	*Queensland fruit fly* *Mediterranean fruit fly*	*NSW, WA only*	*100 mL/100 L water*	*NR*	*TO DELETE: Was to have been restricted to use on inedible peel varieties only. Based on advice that ALL current commercial varieties are edible peel*
Guava, kiwifruit Inedible peel varieties ONLY	Queensland fruit fly Mediterranean fruit fly		100 mL/100 L water	NR	SUPPORTED with restrictions: for use on Inedible peel varieties ONLY. Rehandling period: after the product solution has dried
Avocados, bananas, banana-passionfruit, cactus fruit custard apple, feijoa, mangoes, passionfruit pawpaws, pomegranates, tamarillo	Queensland fruit fly Mediterranean fruit fly, (Darwin fly—mango)		100 mL/100 L water	NR	SUPPORTED: rehandling period: after the product solution has dried
SEED DRESSINGS					
Canola	*Red legged earth mite, lucerne flea*	*Vic, Tas, SA, WA only*	*150–165 mL/600 mL water/50 kg seed*	*NR*	*TO DELETE:* *unacceptable OHS risks additionally insufficient residues data provided to the reconsideration of dimethoate,* *Residues data provided as part of*
Clover sub-clover	*Red legged earth mite, lucerne flea*	*NSW, Vic, Tas, SA, WA only*	*300 mL/ 2 L water /100 kg seed*	*NR*	
Linseed	*Red legged earth mite, lucerne flea*	*Vic, Tas, SA, WA only*	*300 mL/ 900 mL water/ 50 kg seed*	*NR*	

Crop	Pest	State	Rate	WHP	Changes proposed
Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics					
Lucerne	*Red legged earth mite, lucerne flea*	*NSW, Vic, Tas, SA, WA only*	*600–620 mL/ 2–2.5 L water/100 kg seed*	*NR*	*a registration application has been assessed separately and is not available to the reconsideration of dimethoate.*
Vetches	*Red legged earth mite, lucerne flea*	*Vic, Tas, SA, WA only*	*75 mL/600 mL water 50 kg seed*	*NR*	
Lupins	*Red legged earth mite, lucerne flea*	*Vic, Tas, SA, WA only*	*75 mL/600 mL water 50 kg seed*	*NR*	
Peas	*Red legged earth mite, lucerne flea*	*NSW, Vic, Tas, SA, WA only*	*75 mL/600 mL water 50 kg seed*	*NR*	
ORNAMENTALS AND NON-FOOD CROPS					
Ornamentals (not chrysanthemums, begonias, liquidambar or gloxinias) not all labels included all of these uses.	Aphids, thrips, jassids, spider mite, leafhopper	All states, except: Bronze orange bug (NSW, Qld, SA, Vic, WA only) Woolly Aphid (Vic, SA, Tas, WA only)	75 mL/100 L	NR	Proposed re-entry period Day 4 for cut flowers hand harvesting day 0 (once spray has dried) for all other activities.
	Azalea lace bug, green vegetable bug, Rutherglen bug, leaf miners, greenhouse white fly, mealybugs, scarab, leaf beetles, beetle larvae, moth caterpillars, lace bugs, gall insects, bronze orange bug, woolly aphid				
	Wingless grasshopper				
Ornamental shrubs (not chrysanthemums, begonias, liquidambar or gloxinias)	Sap-sucking and leaf-eating insects (inc. aphids, mites, leafhoppers (inc. jassids) mealybugs, sawflies, leafminers, white flies, wingless grasshopper, psyllids, scale, leafhoppers, scarab and leaf beetles and beetle larvae, moth caterpillars, lace bugs, gall insects), azalea lace bug, green vegetable bug, Rutherglen bug	All states	75 mL/100 L	NR	Proposed re-entry period Day 0 (once spray has dried) for all activities

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Ornamental farm and forest trees	Sap-sucking and leaf-eating insects (inc. aphids, mites, leafhoppers (inc. jassids) mealybugs, sawflies, leafminers, white flies, wingless grasshopper, psyllids, scale, leafhoppers, scarab and leaf beetles and beetle larvae, moth caterpillars, lace bugs, gall insects), azalea lace bug, green vegetable bug, rutherglen bug	Qld, NSW, WA only	310 mL/100 L (WA) 400 mL + 200 mL surfactant/100L (NSW) 75 mL/100 L (QLD)	NR	Add restraint to the 310 ml/L and 400 ml/L rates: DO NOT apply by handheld knapsack or motorised handheld equipment Proposed re-entry period day 9 for Irrigation (hand set)—if applicable day 7 for harvesting (hand) (Christmas tree/ seed cones) day 1 for pruning (hand), shaping, scouting day 0 (once spray has dried) for; container moving, grading/tagging, transplanting, weeding (hand)
Ornamental farm and forest trees	*Application **by trunk injection.** Pests as listed above*	*Qld, NSW, WA only*	*1.0 L/1.0 L (use 3 mL of mixture/cm of tree diameter*	*NR*	*Delete: trunk injection method not supported due to risk of unacceptable worker exposure*
Trees: Eucalyptus, Kurrajongs, Flame trees, Umbrella trees,	Jarrah leaf miner, psyllids, kurrajong leaf miner, leaf blister, sawfly, lerp insects, scale insects, spittle bugs, mites	WA only	25 mL/8 L (= 312.5 ml/100 L)	NR	Add restraint: DO NOT apply by handheld knapsack or motorised handheld equipment *Delete: trunk injection method from labels* Re-entry periods as above
Duboisia,	Thrips	QLD and WA only	75 mL/100 L	NR some labels list as 7 days	Proposed re-entry period day 0 (once spray has dried) for all activities. Not a food commodity therefore no changes proposed to the WHP

Crop	Pest	State	Rate	WHP	Changes proposed
	Use patterns deleted in October 2011 marked as strikethrough text. Uses proposed for deletion are in italics				
Protea and wildflowers,	Aphids, thrips, leafhopper, Rutherglen bug	WA only	75 mL/100 L	NR	Proposed re-entry period day 4 for cut flowers hand harvesting day 0 (once spray has dried) for all other activities.
Oil tea tree, (melaleuca alternifolia)	Tip-gall midge (*Dasineura sp*.), psyllids, Pyrgo beetle	Qld, NSW, only	340 mL/ha Boom spray: Apply in 50–100L water/ha Aircraft: Apply in 20–40 L water/ha	5 months	Proposed re-entry period day 0 (once spray has dried) for all activities. Not a food commodity therefore no changes proposed to the WHP

No change to first aid instructions for 400 g/L products

No change to the current instructions:

If swallowed, splashed on skin or in eyes, or inhaled, contact a Poisons Information Centre (phone Australia 131126) or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed, activated charcoal may be advised. Give atropine if instructed.

Amendments to safety directions 400 g/L products

Poisonous if absorbed by skin contact, inhaled or swallowed. Repeated minor exposure may have a cumulative poisoning effect. Will damage eyes and skin. Repeated exposure may cause allergic disorders. Avoid contact with eyes and skin.
When opening the container and preparing spray wear cotton overalls buttoned to the neck and wrist, a washable hat, a PVC or rubber apron, elbow-length chemical resistant gloves, a face shield and impervious footwear.

When using the prepared spray (or dip for pre-plant and post-harvest dipping) wear elbow-length chemical resistant gloves.

If applying by hand by vehicle mounted low pressure equipment wear cotton overalls buttoned to the neck and wrist, elbow-length chemical resistant gloves and a half face-piece respirator with organic vapour/gas cartridge or canister.

If clothing becomes contaminated with product remove clothing immediately. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use wash gloves, face-shield, respirator and contaminated clothing.

New re-entry and rehandling periods 400 g/L products

Avocado, mango trees: DO NOT allow entry into treated areas for 9 days for fruit thinning and for 2– days for hand harvesting.DO NOT allow entry into treated areas for hand pruning, irrigation, orchard maintenance, weeding, scouting, or transplanting until the spray has dried. If prior entry is required, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and gloves. Clothing must be laundered after each day's use.

Citrus trees: DO NOT allow entry into treated areas for 4–days hand harvesting. DO NOT allow entry into treated areas for hand pruning, orchard maintenance, weeding, baiting/trapping, scouting, or transplanting until the spray has dried. If prior entry is required, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and gloves. Clothing must be laundered after each day's use.

Ornamentals—cut flowers or nursery plant: DO NOT allow entry into treated areas for container moving, hand harvesting of cut flowers, hand irrigation, pinching, hand pruning, scouting, transplanting, and hand weeding until the spray has dried. If prior entry is required, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and gloves. Clothing must be laundered after each day's use.

Ornamental trees farm and forest trees: DO NOT allow entry into treated areas for 9 days for hand set irrigation. DO NOT allow entry into treated areas for 7–days for hand harvesting and for 1–day for hand pruning, shaping or scouting. DO NOT allow entry into treated areas for container moving, grading/tagging, transplanting or weeding until the spray has dried. If prior entry is required, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and gloves. Clothing must be laundered after each day's use.

Glasshouses and other confined areas: DO NOT re-enter until spray deposits have dried and areas has been thoroughly ventilated.

All other crops (litchi, blackberries, raspberries, vegetables, grain legumes, cereals, cotton, oilseeds, forage crops, tobacco, ornamental shrubs, duboisia, oil tea tree): DO NOT enter treated areas until the spray has dried, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

Post-harvest dipping of fruit and vegetables, and pre-plant dipping of plants:
DO NOT handle treated fruit, vegetable or plant until the product solution has dried. If prior handling is required, wear elbow-length chemical resistant gloves

Withholding periods to be deleted from 400 g/L products

DELETE: grapes, stone fruit—was previously not required when used according to directions

DELETE: abui, banana, banana passionfruit, casimiroas (white sapote), cherimoya, custard apple, granadillas passionfruit, paw paw, santols, sapodillas (chikus), wax jambus was previously DO NOT harvest for 7–days after application

DELETE: post-harvest dipping persimmons (inedible peel varieties), was previously NOT REQUIRED WHEN USED AS DIRECTED (dip uses only)

DELETE: sweetcorn was previously DO NOT harvest for 7–days after application and DO NOT graze or cut for stock food for 7–days after application

DELETE: carrot, globe artichoke, parsnips radish, was previously DO NOT harvest for 14–days after application

DELETE: broccoli, drumhead cabbage (specified varieties only), cauliflower, celery was previously DO NOT harvest for 21–days after application

DELETE: chilli peppers was previously DO NOT harvest for 3–days after application

DELETE: seed dressings (vetches, lupins, peas, lucerne, clover, linseed canola), was previously NOT REQUIRED WHEN USED AS DIRECTED

DELETE: forage crops and leucaena was previously DO NOT graze or cut for stock food for 14–days after application

Withholding periods proposed for 400 g/L products including amendments

Citrus
DO NOT harvest for 7–days after application

Blueberries (and other vaccinium berries including bilberries)
DO NOT harvest for 1–day after application

Blackberries, raspberries
DO NOT harvest for 7–days after application

Avocado, litchi/lychee,
DO NOT harvest for 7–days after application

Mango
DO NOT harvest for 3–days after application

Post-harvest dipping (avocados, bananas, cactus fruit, chilli, custard apples, feijoas, guavas, kiwifruit (chinese gooseberries inedible peel varieties), litchis (lychees), mangoes, melons, passionfruit, banana passionfruit, pawpaws, pomegranates, tamarillos, watermelons)
NOT REQUIRED WHEN USED AS DIRECTED (dip uses only)

Litchi (pre-planting dip)
Harvest withholding period: NOT REQUIRED WHEN USED AS DIRECTED

Asparagus, onions, rhubarb
DO NOT harvest for 7–days after application

Beans, Peas (green vegetables—AMENDED: to add NOT SUGAR OR SNAP PEAS)
DO NOT harvest for 7–days after application
DO NOT graze or cut for stock food for 7–days after application

Beetroot, potatoes, sweet potatoes, turnip, ADD Eggplant
DO NOT harvest for 14–days after application.

Strawberries (runner production—vegetative planting material only)
Not required when used as directed (DO NOT use on fruiting strawberries)

Tomatoes (for processing only)
DO NOT harvest for 21–days after application

Tomatoes, large, field grown for fresh consumption
Not required when used as directed
(i.e. DO NOT apply after commencement of flowering)

Capsicums
DO NOT harvest for 3–days after application

Melons (including watermelons) AMENDED: to increase WHP from 1–day to 7–days
DO NOT harvest for 7–days after application

Zucchini
DO NOT harvest for 1–day after application

Cereals, (including maize, sorghum)
DO NOT harvest for 4–weeks after application
DO NOT graze or cut for stock food for 14–days after application

Cotton
DO NOT harvest for 14–days after application
DO NOT feed cotton fodder, stubble or trash to livestock

Oilseeds (other than peanut and cotton) AMENDED: replace the current WHP of 14–days harvest and 14–days grazing with
Not required when used as directed (DO NOT use after crop emergence)

Pulses (grain legumes) ADD peanuts
DO NOT harvest for 14–days after application
DO NOT graze or cut for stock food for 14–days after application

Pastures AMENDED: replace the current WHP of 14–days grazing with
Grazing withholding period: Not required when used as directed (DO NOT use after crop emergence**)**

APPENDIX C: PROPOSED MRL STANDARDS FOR DIMETHOATE AND OMETHOATE

Table 15: Recommended entries in Table 1 of the APVMA MRL Standard for dimethoate

COMPOUND	FOOD	MRL (mg/kg) DIMETHOATE
DIMETHOATE		AT END OF PHASE OUT
FC 0001	Citrus fruits	5
FB 0264	Blackberries	5
FB 0272	Raspberries, red, black	5
FB 0275	Strawberry	*0.02
FB 0019	Vaccinium berries, including bearberry	5
FI 0030	Assorted tropical and sub-tropical fruits—inedible peel (except avocado, mango and pineapple)	5
	Abiu	5
FI 0326	Avocado	3
	Banana passionfruit	5
	Cactus fruit	5
FI 0345	Mango	1
FI 0353	*Pineapple (permit use)*	*0.07*
	Rollinia	5
	Santols	5
OR 0305	*Olive oil, refined (permit use)*	*T0.1*
VA 0385	Onion	0.7
VC 0046	Melons, except watermelon	5
VC 0431	Squash, summer [zucchini]	0.7
VC 0432	Watermelon	5
VO 0440	*Eggplant (current permit use proposed permanent use)*	0.2
VO 0445	Peppers, sweet [capsicums]	0.7
VO 0448	Tomato	0.02
VP 0060	Legume vegetables	2
VD 0070	Pulses	0.7

COMPOUND DIMETHOATE	FOOD	MRL (mg/kg) DIMETHOATE AT END OF PHASE OUT
VR 0574	Beetroot	*0.1
VR 0589	Potato	0.1
VR 0508	Sweet potato	0.1
VR 0506	Turnip, garden	*0.2
VS 0621	Asparagus	0.02
VS 0627	Rhubarb	0.7
GC 0080	Cereal grains	0.5
CF 0654	Wheat bran, processed	1
SO 0088	Oilseed [except cotton seed, peanut]	0.2
SO 0691	Cotton seed	*0.1
SO 0697	Peanut	0.02
MO 0105	Edible offal (mammalian)	0.1
PE 0112	Eggs	*0.05
MM 0095	Meat [mammalian]	*0.05
ML 0106	Milks	*0.05
PO 0111	Poultry, edible offal of	*0.05
PM 0110	Poultry meat	*0.05

MRLs in italics associated with permits

Table 16: Recommended entries in Table 4 of the APVMA MRL Standard for dimethoate

COMPOUND DIMETHOATE	ANIMAL FEED COMMODITY	MRL (mg/kg) DIMETHOATE AT END OF REVIEW
AB 0001	Citrus pulp, dry	10
	Cotton seed meal and hulls	0.5
	Primary feed commodities	40
	Tomato pomace, dry	0.02

The following entries in Table 1 and Table 4 of the MRL Standard are recommended for omethoate:

Table 17: Recommended entries in Table 1 of the APVMA MRL Standard for omethoate

COMPOUND OMETHOATE	FOOD	MRL (mg/kg) OMETHOATE
FC 0001	Citrus fruits	0.5
FB 0264	Blackberries	3
FB 0272	Raspberries, red, black	3
FB 0275	Strawberry	*0.01
FB 0019	Vaccinium berries, including bearberry	2
FI 0030	Assorted tropical and sub-tropical fruits—inedible peel (except avocado, mango and pineapple)	2
	Abiu	2
FI 0326	Avocado	0.1
	Banana passionfruit	2
	Cactus fruit	2
FI 0345	Mango	0.1
FI 0353	*Pineapple (permit use)*	*0.03*
	Rollinia	2
	Santols	2
OR 0305	*Olive oil, refined (permit use)*	*T0.01*
VA 0385	Onion, bulb	0.5
VC 0046	Melons, except watermelon	0.2
VC 0431	Squash, summer [zucchini]	0.2
VC 0432	Watermelon	0.2
VD 0070	Pulses	0.1
VO 0440	*Eggplant (current permit use—proposed permanent use)*	0.07
VO 0445	Peppers, sweet [capsicums]	0.3
VO 0448	Tomato	0.02
VP 0060	Legume vegetables	1
VR 0574	Beetroot	*0.05
VR 0589	Potato	0.05

COMPOUND	FOOD	MRL (mg/kg)
OMETHOATE		OMETHOATE
VR 0494	Radish	
VR 0508	Sweet potato	0.05
VR 0506	Turnip, garden	*0.1
VS 0621	Asparagus	*0.002
VS 0627	Rhubarb	0.3
GC 0080	Cereal grains	*0.05
CF 0654	Wheat bran, processed	0.05
SO 0088	Oilseed [except peanut and cotton]	0.05
SO 0691	Cotton seed	*0.05
SO 0697	Peanuts	*0.01
MO 0105	Edible offal (mammalian)	0.1
MM 0095	Meat [mammalian]	*0.05
ML 0106	Milks	*0.05
PE 0112	Eggs	*0.05
PO 0111	Poultry, edible offal of	*0.05
PM 0110	Poultry meat	*0.05

[a]The MRLs recommended for omethoate at suspension were not established while the omethoate reconsideration was still in progress.

MRLs in italics associated with permits

Table 18: Recommended entries in Table 4 of the APVMA MRL Standard for Omethoate

COMPOUND	ANIMAL FEED COMMODITY	MRL (mg/kg) OMETHOATE
OMETHOATE		AT END OF REVIEW
AB 0001	Citrus pulp, dry	0.5
	Cotton seed meal and hulls	*0.05
	Primary feed commodities	10
	Tomato pomace, dry	0.02

APPENDIX D: PROPOSED CHANGES ACTIVE CONSTITUENT STANDARD FOR DIMETHOATE

CURRENT STANDARD Version 1 August 2004	Proposed standard
1. DESCRIPTION The material shall consist of dimethoate together with related manufacturing impurities and shall be in the form of white to greyish crystals, free from visible extraneous matter and added modifying agents.	CHANGE TO: The material shall consist of dimethoate together with related manufacturing impurities and shall be a white solid, having a mercaptanic odour, free from visible extraneous matter and added modifying agents
2. COMMON NAME: DIMETHOATE	NO CHANGE
3. CHEMICAL NAME (IUPAC): O,O-dimethyl S-methylcarbamoylmethyl phosphorodithioate	NO CHANGE
4. CAS NUMBER: 60-51-5	NO CHANGE
5. IDENTITY TEST: NO CHANGE Identity of the active constituent must be established by one or more of the following methods: spectroscopic tests (IR spectrum, NMR, mass spectra), Chromatography (HPLC or GC retention time with reference compound) or any other suitable test method	
6. COMPOSITION: 6.1. Active constituent: 950 g/kg minimum 6.2. Toxicological impurity: 0,0,S-trimethyl phosphorodithioate: 5g/kg max	ADD IMPURITY SPECIFICATIONS 6.1 Active constituent: 950 g/kg minimum 6.2 Toxicological or relevant impurities Omethoate (CAS No. 1113-02-6, CAS name O,O-dimethyl S-[2-9methylamino0-2-oxoethyl]phosphorothioate) Maximum 2 g/kg Isodimethoate (CAS No.3344-11-4, CAS name phosphorodithioc acid, O,S-dimethyl S-[2-(methylamino)-2-oxoethyl] ester) Maximum 3 g/kg 0,0,S-trimethyl phosphorodithioate: 5g/kg max Water Maximum 2 g/kg
ANALYTICAL METHODS: The analytical method used for the determination of the active constituent and toxicological significant impurities must be validated in accordance with the APVMA guidelines for the validation of analytical methods.	NO CHANGE

GLOSSARY

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
AChE	Acetyl cholinesterase—an enzyme essential for the regulation of nerve tissue function
Agvet Code	Agricultural and Veterinary Chemicals Code, scheduled to the 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
ChE	Cholinesterase
EC	Emulsifiable concentrate—a liquid formulation
EU	European Union
FAISD	First Aid Instruction and Safety Directions
GAP	good agricultural practice
JMPR	Joint FAO/WHO Meeting on Pesticide Residues
LD_{50}	Lethal Dose 50 (Median Lethal Dose)—the dose level at which 50% of the test animals died
MOE	Margin of exposure a measure of occupational exposure to a compound
MRL	maximum residue limit
NEDI	National estimated daily intake (of chemical)
NESTI	National Estimated Short-Term Intake
NOAEL	no observable adverse effect level
NOEL	No Observed Effect Level
OCS	Office of Chemical Safety within the Australian Government Department of Health
OHS	occupational health and safety
OP	organophosphorus pesticide
PPE	personal protective equipment such as gloves and overalls
SC	suspension concentrate
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons (formerly the Standard for the Uniform Scheduling of Drugs and Poisons)
US EPA	United States Environmental Protection Agency

WHO	World Health Organization