ENVIRONMENTAL RISK MANAGEMENT AUTHORITY DECISION

5 November 2009

Application Code	HRC07002
Application Type	To reassess a hazardous substance under section 63 of the Hazardous Substances and New Organisms Act 1996 ("the Act")
Applicant	Chief Executive of ERMA New Zealand
Application Received	18 February 2009
Submission Period	18 February 2009 – 15 May 2009
Considered by	A Committee of the Authority ("the Committee")
Purpose of the Application	The reassessment of azinphos methyl and formulations containing azinphos methyl

1 Summary of decision

1.1 Following consideration of the application for reassessment, the Committee:

(a) declines the further importation, manufacture or use of azinphos methyl and formulations containing azinphos methyl under the following approvals:

- azinphos methyl (Approval Number HSR002815);
- Suspension concentrate containing 350g/litre azinphos methyl (Approval Number HSR000160);
- Wettable powder containing 350g/kg azinphos methyl (Approval Number HSR000161);
- Cotnion 200 Insecticide (Approval Number HSR002486) except as provided in (b) below; and

revokes the approvals; and

(b) subject to paragraphs 1.2 to 1.4 below, approves the importation, manufacture, and/or use of Cotnion 200 Insecticide (Approval Number HSR002486) until the expiry of 31 December 2014 for use on:

- potato crops;
- summerfruit crops; and
- strawberry runner plants.

and the controls set out in **Table 1 Appendix 2** will continue in effect.

1.2 Within three months of the date of this decision, the new controls set out in **Appendix 2 Table 2** will apply (where applicable) in addition to those in **Appendix 2 Table 1**.

1.3 Cotnion 200 Insecticide (Approval Number HSR002486) must not be applied by aerial application and must not be available for use or used for domestic use from the date that this decision comes into effect;

1.4 By 1 January 2015, all then existing stocks of the substance must be used or disposed of in accordance with the storage and disposal controls set out in **Appendix 2**.

1.5 This decision will come into effect 28 days after publication of the direction in the New Zealand *Gazette*.

2 Background

2.1 This decision should be read in conjunction with the Agency's reassessment application dated 18 February 2009 and the subsequent Update Paper provided to the Committee prior to the hearing, which summarised the submissions and new information received following notification of the application.

2.2 Azinphos methyl is a broad-spectrum organo-phosphate insecticide. It has been used in New Zealand since 1965, although from 2003 to 2006 no azinphos methyl products were marketed. Currently, there are three HSNO-approved azinphos methyl formulations: Suspension concentrate containing 350g/litre azinphos methyl; Wettable powder containing 350g/kg azinphos methyl; Cotnion 200 Insecticide.

2.3 Cotnion 200 Insecticide is the only formulation currently registered with the New Zealand Food Safety Authority.

2.4 Historically azinphos methyl has been used on a variety of crops in New Zealand but is current only known to be used on potatoes, summerfruit and the 'off label' use on strawberry runner plants.

2.5 Approval for the use of azinphos methyl and azinphos methyl formulations has been withdrawn in the European Union. According to published decisions Canada and the United States (US) will phase out the use of azinphos methyl by the end of 2012 with additional controls imposed in the interim. Exemptions and extension could be granted.

2.6 In Australia, azinphos methyl was nominated for review in 1994 as part of the existing Chemicals Review Programme because of concerns about toxicity, occupational health and safety, ecotoxicity residues and possible impacts on Australian trade. In October 2006 the Australian Pesticides and Veterinary Medicines Authority (APVMA) released the Azinphos-methyl Preliminary Review Findings Report. This report proposed a number of mitigation measures that were implemented while the review continued. The Committee notes that the APVMA's review is still in progress.

2.7 In the application for reassessment, as modified in the Update paper, the Agency recommended that the existing approvals for azinphos methyl should be revoked but all uses phased out over a five year period to allow time for industry to develop and obtain approvals and registrations for alternative substances. This preliminary recommendation was made on the basis that the risks associated with the use of azinphos methyl in New Zealand outweigh the limited benefits of use. The key risks of

concern identified in the application relate to the high risks to the environment and risks to workers.

2.8 In making this original recommendation, the Agency recognised that most of the human health risks could be managed by prescribing personal protective equipment (PPE) and introducing buffer zones.

2.9 The Agency recognised that the risks to aquatic organisms could be managed by introducing buffer zones for waterways. However in the original application the Agency recognised that buffer zones would not reduce the risks to birds or non-target (beneficial) insects.

2.10 The Agency reviewed new higher tier studies submitted during the submissions period and concluded that the risks to birds was overstated in the application, therefore no controls are required to manage the risks to birds.

2.11 The Agency evaluated the impact of revoking the approvals in terms of the availability of alternatives and the hazard profile of those alternatives. This evaluation has shown that there are potential alternatives available for all current uses and that at least some of these alternatives are less hazardous than azinphos methyl. Based on information received in the submissions, and advice received from Plant & Food Research, the Agency revised its original proposal and recommended a five year phase out for use on strawberry runner plants, summerfruit and potatoes. The Committee notes that this advice to the Agency reflected the length of time needed to develop and trial the potential alternative products for these uses.

2.12 The Agency concluded that the use of alternative products is preferable to the continued use of azinphos methyl, but for crops where there are no registered alternatives available a five year phase out period that allows time for alternatives to be registered is recommended. It also recommended that during this phase out period additional controls designed to better manage the risks should be applied.

3 Legislative criteria for application

3.1 The application for the reassessment of azinphos methyl and formulations containing azinphos methyl was lodged pursuant to section 63 of the Act following grounds for reassessment having been established under section 62 by the Authority in its decision dated 29 June 2007. As required under the Act, the application for reassessment was deemed to be an application made under section 29. Section 29 requires the Authority to consider adverse and positive effects of the substance(s) and to make a decision based on whether or not the positive effects of the substance outweigh the adverse effects of the substance.

3.2 In making this decision the Authority has applied the relevant sections of the Act and followed the relevant provisions of the Methodology as detailed in the decision path set out in **Appendix 1** to this decision.

3.3 Reference made to sections in this document means that section of the HSNO Act, reference to clause refers to the relevant clause in the methodology.

4 Application process

4.1 The application was publicly notified on the ERMA New Zealand website on 18 February 2009 and subsequently in the four main newspapers (New Zealand Herald, Dominion Post, Christchurch Press and Otago Daily Times).

4.2 Submissions closed on 15 May 2009, 60 working days after public notification. A total of eight (8) submissions were received, of which three requested a hearing into the matter.

4.3 Two submitters supported the revocation of all azinphos methyl approvals. Three submitters supported the 5 year phase out with additional controls. Two submitters supported the continued use of azinphos methyl. One submitter, namely Agcarm Inc, neither supported nor opposed the recommendation, but requested a hearing in order to point out to the Committee the implications of an immediate or quick (less than 1 year) "deregistration" of reassessed substances. Agcarm's concerns related to the impact on those with significant amounts of 'stock in trade' (or on order), safe disposal of stocks, the need to allow sufficient time to find alternative products and the longer term impact of future decisions of manufacturers and distributors of "quick deregistration".

4.4 Various Government departments, Crown Entities and interested parties, including the New Zealand Food Safety Authority (Agricultural Compounds and Veterinary Medicines (ACVM) Group), the Ministry of Health and the Department of Labour Work Place Group, which in the opinion of the Authority would be likely to have an interest in the application, were notified of the receipt of the application (sections 53(4) and 58(1)(c), and clauses 2(2)(e) and 5) and provided with an opportunity to comment or make a public submission on the application. No comments were received from these parties.

4.5 The Agency project team comprised the following members of ERMA New Zealand staff:

Name	Title
Dr Susan Collier	Senior Advisor Hazardous Substances
Cora Drijver	Advisor Hazardous Substances
Jim Waters	Senior Advisor Hazardous Substances
Patrick Gemmell	Māori Unit
Janet Gough	Principal Analyst
Michael Morris	Manager, Reassessments

4.6 The following external experts were used in the consideration of this application:

Name	Title
Robin Toy	Ecotoxicologist
Dr Martin Edwards	Toxicologist

4.7 For the application a report was also commissioned from Plant and Food Research on the use of azinphos methyl in New Zealand. The reports addressed issues related to the use patterns, including 'off label' uses, benefits from the use of the substance in New Zealand, lifecycle information and availability of alternatives. A further report was commissioned from Plant and Food Research to reply to the comments from submissions relating to the information they provided in the original report.

4.8 A report on the application was received from Ngā Kaihautū Tikanga Taiao (Ngā Kaihautū) (dated 8 May 2009). The role of Ngā Kaihautū is to provide advice and assistance, from a Māori perspective, to the Authority on applications under the Act. Ngā Kaihautū supported the Agency's recommendation that the existing approvals be revoked.

4.9 The following members of the Authority's Hearings Committee considered the application in accordance with a delegation under section 19(2)(b): Helen Atkins (Chair), Dr Deborah Read and Dr Max Suckling. The Committee considered the application following the hearing held at the offices of ERMA New Zealand on 4 August 2009.

5 The public hearing

5.1 The Agency provided the Committee with a summary of the application and a written response to the matters raised in submissions.

5.2 The Committee then heard from the three submitters who had requested a hearing.

5.3 The Committee was fortunate that Mr Peter Chalmers, a representative of Agronica, the company which manufactures the products used in New Zealand, was able to attend the hearing and assist the Committee in relation to a number of questions and issues that arose.

5.4 The Committee also heard from members of the industry, including Simon Ogden representing both Potatoes New Zealand and Summerfruit New Zealand. Simon was supported by Brian Hart on behalf of Potatoes New Zealand and Earnscy Weaver on behalf of Summerfruit New Zealand. They provided the Committee with information concerning the practicality of the proposed controls.

5.5 The Committee notes concerns expressed at the hearing about what would happen if there are no suitable alternatives available in five years. The Committee notes that it is open to any person to apply for an approval for azinphos methyl under Part 5 of the Act at (or before)that time if it is necessary to do so.

5.6 The Committee acknowledged that the submitters had made a considerable time investment to be involved in the hearing and thanked them all for their involvement.

6 Consideration

Information review

6.1 In the application, the Agency concluded that on the weight of the evidence, the information available to it constituted an adequate and appropriate basis for assessing the risks, costs and benefits associated with azinphos methyl and formulations containing azinphos methyl. In the absence of quantitative exposure information, the Agency used qualitative exposure assessment models to determine the levels of risk to human health and the environment. The Agency noted that there was some uncertainty inherent in these assessments.

6.2 The risk management framework used by the Committee requires consideration of uncertainty. Clause 8 requires the Committee to be mindful of the scale and significance of the risks, costs and benefits when reviewing the information available. In addition, according to clause 29, when there is scientific and technical uncertainty or disputed information, the Committee must determine the materiality and relevance of that uncertainty. If such uncertainty cannot be resolved, clause 30 requires the Committee to take into account the need for caution in managing the adverse effects of the substance.

6.3 The Committee has reviewed the available information and is satisfied that the available information is relevant and appropriate and is sufficient to demonstrate that the effects are of a sufficient magnitude to warrant attention under the Act.

6.4 In reviewing the information and reaching its decision the Committee has taken into account the ethical considerations that are associated with the use of the substance. Specifically, the Committee has applied the principles and procedural standards of the ERMA New Zealand Ethics Framework to its consideration of all the information provided

Hazard classification and controls

6.5 The Committee adopted the Agency's classification of azinphos methyl and formulations containing azinphos methyl as follows:

Table 1: Classification of azinphos methyl formulations and its formulations

Hazard Class/Subclass	Azinphos methyl	Suspension concentrate containing 350g/litre azinphos methyl	Wettable powder containing 350g/kg azinphos methyl	Cotnion 200 Insecticide
Subclass 6.1 Acute toxicity (oral)	6.1A	6.1B	6.1C	6.1B
Subclass 6.1Acute toxicity (dermal)	6.1B	6.1B	6.1B	6.1C
Subclass 6.1 Acute toxicity (inhalation)	6.1B	6.1C	6.1B	6.1B

Hazard Class/Subclass	Azinphos methyl	Suspension concentrate containing 350g/litre azinphos methyl	Wettable powder containing 350g/kg azinphos methyl	Cotnion 200 Insecticide
Subclass 6.3/8.2 Skin irritancy/ corrosion	No	No	No	No
Subclass 6.4/8.3 Eye irritancy/corrosion	No	No	No	No
Subclass 6.5 Respiratory sensitisation	ND	ND	ND	ND
Subclass 6.5 Contact sensitisation	6.5B	6.5B	6.5B	6.5B
Subclass 6.6 Mutagenicity	No	No	No	No
Subclass 6.7 Carcinogenicity	No	No	No	No
Subclass 6.8 Reproductive/ developmental toxicity	No	No	No	No
Subclass 6.9 Target organ systemic toxicity	6.9A	6.9A	6.9A	6.9A
Subclass 9.1 Aquatic ecotoxicity	9.1A	9.1A	9.1A	9.1A
Subclass 9.2 Soil ecotoxicity	9.2C	9.2C	9.2C	no
Subclass 9.3 Terrestrial vertebrate ecotoxicity	9.3A	9.3A	9.3A	9.3A
Subclass 9.4 Terrestrial invertebrate ecotoxicity	9.4A	9.4A	9.4A	9.4A

Controls

6.6 In the application, the Agency assessed the appropriateness of the current controls assigned as part of the existing approvals. These controls were based on the substances' hazardous properties as set out in the HSNO Regulations and were used as a reference for evaluation in the application.

6.7 Under section 77A of the Act, the Authority may impose as controls any obligations and restrictions as the Authority thinks fit. Under section 77A(4), the Authority must be satisfied that, against any other specified controls that apply to the substance,

(a) the proposed control is more effective in terms of its effect on the management, use and risks of the substance; or

(b) the proposed control is more cost-effective in terms of its effect on the management, use and risks of the substance; or

(c) the proposed control is more likely to achieve its purpose.

6.8 In the application, the Agency evaluated the risks, costs and benefits in association with the current controls and found that there were significant (non-negligible) risks

associated with the use of azinphos methyl in New Zealand which potentially outweighed the benefits. The Agency made a number of recommendations including:

- that aerial and domestic use be prohibited one month from the date of the decision
- that application uses other than summerfruit, strawberry runner plants and potatoes application be prohibited one month from the date of the decision,
- that use on potatoes be prohibited one year from the date of the decision
- that use on summerfruit and strawberry runner plants be prohibited five years from the date of the decision
- proposed Restricted Entry Intervals (REIs)
- a "no spray" buffer zone for protection of the environment and bystanders
- prescriptive requirements for PPE and respiratory protective equipment (RPE).

6.9 Following the receipt of submissions, the Agency reviewed its original recommendations and made a number of revised recommendations in the Update Paper. These included:

- that use on potatoes be prohibited five years from the date of the decision
- defining waterways and public places with respect to buffer zones

6.10 The submissions raised some concerns with respect to the practicality of the buffer zone for waterways and re-entry interval PPE.

6.11 Because there is no New Zealand specific data available the Agency proposed re-entry interval PPE based on the US EPA intervals. The Committee acknowledges that these values may not be applicable to New Zealand circumstances. Specifically with respect to potatoes, the US EPA intervals relate to young and mature plants, whereas when azinphos methyl is sprayed on potatoes in New Zealand no foliage is being sprayed.

6.12 The current controls do not provide for re-entry restrictions and or PPE requirements. The Committee agreed with the Agency that such controls ought to be imposed. Industry did not raise any practical issues in this respect, save for the use of full PPE being worn in summer months in Central Otago and Hawke's Bay as this may create other health concerns for workers. The Committee therefore imposed the following controls (noting that separate REI's apply for contact and non contact re entry):

- Restricted entry interval for contact re-entry potato, summerfruit and strawberry runner plants – 0-7 days - full PPE;
- Restricted entry interval for contact re-entry potato, summerfruit and strawberry runner plants – 8-14 days - reduced PPE;
- Restricted entry interval for non contact re-entry potato – no PPE requirements;
- Restricted entry interval for non contact re-entry summerfruit and strawberry runner plants – 0-3 days - reduced PPE.

6.13 The Committee notes that the REI's are not based on New Zealand-specific data but is satisfied that they will be more effective in terms of managing the human health risks for these uses, than the current controls and thus the test in section 77(4)(a) is met.

6.14 The practicality of the 100m buffer zone for protection of waterways was discussed at the hearing. Industry representatives indicated that a 100m buffer zone would be very

difficult to manage for potatoes as there are many small plots growing potatoes in fields in which drainage ditches are common.

6.15 Modelling results, including those from the AgDrift model, indicate that a 100 m buffer zone may manage the risks to aquatic organisms. Reducing this buffer zone will increase the risks to aquatic organisms. The Committee notes that buffer zones are applied internationally to mitigate risks from spray drift and run off and that 100 m buffer zones have been applied to azinphos methyl products in Australia and USA.

6.16 The Agency has investigated alternative means of managing spray drift including spray adjuvants and the use of specific nozzles.

6.17 Following these investigations, the Committee notes that there is currently limited evidence about the effectiveness of drift-reducing spray adjuvants. The Agency has advised that is not aware of any regulatory agency throughout the world which currently endorses the use of adjuvants for reducing spray drift. The APVMA states in its 2008 spray drift document[1]:
"It is important to emphasise that a chemical user must not rely on tank mix products advertised as "drift retardant" to achieve the correct droplet spectrum. The APVMA has no consistent data supporting the efficacy of these products. For the present, chemical users should always rely on proper nozzle choice and system pressures to achieve optimal droplet size rather than using unproven tank mix additives"

6.18 In relation to the use of drift-reducing spray nozzles, the Committee concludes that this may be a very effective way to reduce spray drift, however, nozzles are only part of the solution for controlling spray drift. Spray drift is to a large degree determined by the droplet size distribution. Droplet size distribution is determined not just by what nozzle is used but also by the spray pressure and the spray tank mix. Overseas regulators don't just specify what nozzles should be used but they also specify what the spray pressure and tank mix should be. In addition they have certification schemes to ensure that sprayers are actually producing the right sized droplets. The Committee notes that the Agency requires more time to investigate this option and to determine the feasibility of such controls in New Zealand.

6.19 The Committee notes that buffer zones as large as 100m in New Zealand growing conditions may be a fairly "blunt" regulatory tool and that they may not be a practical or cost-effective solution for the protection of aquatic organisms. Currently there is insufficient information to apply appropriate, alternative, controls for managing spray drift and the Committee has accordingly reduced the proposed buffer zone control to 50m. The definition has also been changed to indicate that the buffer zone only applies in the downwind direction from the treated crop.

6.20 The Committee would expect that the use of azinphos methyl would be undertaken using good spray practice as per NZS 8409[2] and that any other means of reducing spray drift that are available in any specific circumstance should also be put in place.

[1] http://www.apvma.gov.au/users/downloads/spraydrift_op_principles_July2008.pdf

[2] NZS 8409:2004 Management of Agrichemicals

6.21 The Committee notes that by reducing the buffer zone to 50m the risks to aquatic organisms will increase and this control becomes less effective. However the Committee is satisfied that a 50m buffer zone will be more effective in terms of managing the risks to aquatic organisms for these uses, than the current controls and thus the test in section 77(4)(a) is met.

6.22 The Committee further notes that a 50m buffer zone will also protect bystanders from human health effects in accordance with the Agency's recommendation. The Committee is satisfied that a 50m buffer zone will be more effective in terms of managing the risks to human health for these uses, than the current controls and thus the test in section 77(4)(a) is met.

6.23 Because the risks to the environment cannot be managed effectively in the medium to long term, the continued use of azinphos methyl beyond the 5 year phase out period cannot be justified given the current level of limited benefits.

6.24 The Committee also proposes a control restricting the number of applications per year to two, due to the high risk to the environment. The Committee is satisfied that restricting the number of applications allowed per year will be more effective in terms of managing the risks to human health and the environment for these uses, than the current controls and thus the test in section 77(4)(a) is met.

6.25 The Committee agrees with the Agency's recommendation for prescriptive PPE requirements to manage the risks of operator exposure.

6.26 To aid compliance, the Committee agrees that it is appropriate for the new controls to be mandatory on the product label for the current label uses (potatoes, summerfruit). New stock should be labelled within three months from the date of the decision and stocks with old labels may not be sold after 12 months from the date of the decision.

6.27 The Committee agrees with the Agency that any new controls should be applied during the phase out period.

6.28 The new controls to apply to Cotnion 200 Insecticide are set out in **Table 1 below**.

Table1 Summary of new controls applicable to Cotnion 200 Insecticide

Receptor	Crop	New Control
Operator exposure	Summerfruit	Mixers/loaders must wear: • Coveralls over long-sleeved shirt, long-legged trousers. • Chemical resistant gloves. • Chemical resistant footwear plus socks. • Protective eyewear. • Chemical resistant headgear for overhead exposures. • For exposure in enclosed areas, a respirator with either an organic vapour-removing cartridge with a prefilter approved for pesticides, or a canister approved for pesticides. • For exposure outdoors, dust/mist filtering respirator. Applicators must use a closed cab with appropriate filtering system and have the above RPE (respiratory protective equipment) and PPE (personal protective equipment) immediately available for use if leaving the cab in the treated area, and a system for storing the used RPE and PPE to prevent contamination of the cab. At least long-sleeved shirt and long-legged trousers, footwear plus socks should be worn in the functioning enclosed cab.
	Potato and strawberry	PPE to be worn during mixing/loading and application should comprise at least: • Coveralls over long-sleeved shirt, long-legged trousers. • Chemical resistant gloves. • Chemical resistant footwear plus socks. • Protective eyewear. • For exposure in enclosed areas, a respirator with either an organic vapour-removing cartridge with a prefilter approved for pesticides, or a canister approved for pesticides. • For exposure outdoors, dust/mist filtering respirator.
Re-entry workers exposure to residues- Contact Definition of Contact: contact with anything that was sprayed	Summerfruit, potato & strawberry	REI[3]: • Summer Fruit 0-7 days Full PPE • Summer Fruit 8-14 days Reduced PPE • Potatoes 0-7 days Full PPE • Potatoes 8-14 days Reduced PPE plus long trousers • Strawberry runners 0-7 days Full PPE • Strawberry runners 8-14 days Reduced PPE plus long trousers PPE requirement for entry during REI. Full PPE to comprise: • Coveralls over long-sleeved shirt, long-legged trousers. • Chemical resistant gloves. • Chemical resistant footwear plus socks. • Protective eyewear. • Chemical resistant headgear for overhead exposures.

[3] REI – Restricted Entry Interval

Receptor	Crop	New Control
		Reduced PPE to comprise: • Coveralls over long-sleeved shirt • Cotton gloves. • Boots plus socks. • Hat
Re-entry workers exposure to residues- Non Contact Definition of Non Contact: no intentional contact with anything that was sprayed		REI[4]: • Summer Fruit 0-3 days Reduced PPE • Potatoes No PPE requirements • Strawberry runners 0-3 days Reduced PPE plus long trousers Reduced PPE to comprise: • Coveralls over long-sleeved shirt • Cotton gloves. • Boots plus socks. • Hat
Bystander exposure	Summerfruit	Buffer zone upwind of public areas or the nearest farm buildings or dwellings to exceed 50 m. Buffer zone areas may not include employee housing, private property and other areas people may occupy Definition of public areas: any place where members of the public can legally be.
Aquatic environment (aquatic)	Summerfruit, potato & strawberry	Buffer zones upwind of waterways to exceed 50 m. definition of a waterway: waterways including modified water courses such as reservoirs, irrigation canals, water-supply races, canals for the supply of water for electricity generation or farm drainage canals, as well as natural water bodies.
Other Controls		
Limiting the number of applications per year	Summerfruit, potato & strawberry	Limited to 2 applications per year
New Labelling requirements	Summerfruit and potatoes	New stock must be labelled with new requirements 3 months after this decision comes into effect Stocks with old labels may not be sold after 12 months after this decision comes into effect.

[4] REI – Restricted Entry Interval

Identification and assessment of risks, costs and benefits

6.29 The Committee notes the Agency's identification and assessment of risks, costs and benefits in the application in relation to the environment, human health and safety, the relationship of Māori with the environment, society and the community and the market economy and to New Zealand's international obligations arising from the use of azinphos methyl.

6.30 In relation to risks to the environment, the Committee notes the Agency's assessment of the risks to the environment and in particular that eco-toxicological assessment of azinphos methyl has identified acute risks associated with its use, to fish and aquatic invertebrates and non-target terrestrial invertebrates. The Committee notes that no risk assessment was possible for non-target plants due to unavailability of data.

6.31 Risk mitigation measures can be used to reduce acute risks to an acceptable level for fish, aquatic invertebrates and terrestrial invertebrates. Azinphos methyl has a low bioconcentration factor and it is therefore unlikely to present a risk to organisms through biomagnifications within the aquatic or terrestrial ecosystems.

6.32 In relation to human health effects, the Agency noted in the application that potentially significant risks to human health might arise for the following people:

- operators;
- re-entry workers; and
- bystanders.

6.33 The Committee notes that the Agency's human health assessment has identified risks in terms of toxicity. Modelling data indicates that risk mitigation measures (such as PPE) for operators will not reduce these risks to an acceptable level due to dermal exposure and the same applies for re-entry workers not wearing PPE.

6.34 The Committee further notes the risks to bystanders particularly children exposed to surfaces contaminated with spray drift.

6.35 In relation to risks to society and the economy, the Committee notes that the Agency's qualitative assessment identified only two significant effects namely:

- the affects on society and community , for example increased or decreased anxiety arising from the use of the substance; and
- the effect on the market economy, such as changes in cost and employment.

6.36 The Committee agrees with the Agency's assessment that risks to society and community from the continued use of azinphos methyl are identified as public anxiety and damage to the "clean, green image." These risks cannot be quantified, but are unlikely to be significant.

6.37 The Committee agrees with the Agency's assessment that the case for value for using the substance to counter biosecurity incursions is unlikely to be significant, but that the loss of azinphos methyl could lead to anxiety, particularly for small sectors regarding future pest management.

6.38 The Committee notes the international developments in EU, USA and Canada to remove azinphos methyl from the market and the ongoing regulatory actions in Australia.

6.39 The Agency's view that iwi/Māori would be unlikely to support the continued approval of the substances as covered by the report received from Ngā Kaihautū and other iwi/Māori submitters, is noted by the Committee.

6.40 The only benefits of any significance identified by the Agency in the application were restricted to azinphos methyl's use on potatoes, summerfruit and strawberry runner plants, where currently there is no alternative product available

7 Overall evaluation of the combined impact of all of the risks costs and benefits

7.1 The Committee is required under the Act, to consider whether or not the positive effects (benefits) of using azinphos methyl outweigh the negative effects (risks and costs) of its use after taking account of all safety precautions that might be imposed and the likely effects of the substance being unavailable.

Likely effects of the substances being unavailable

7.2 The Committee notes the Agency's assessment of alternative chemicals or other treatment options.

7.3 In particular, it notes the advice from industry in submissions and from Plant & Food Research that the potential alternative products still need to be trialled and best practice developed for these uses.

7.4 The Committee agrees with the Agency's conclusion that the use of alternative products is preferable to the continued use of azinphos methyl, but for crops where there are no registered alternatives available a five year phase out period that allows time for alternatives to be registered should be put in place. The Committee also agrees with the Agency's recommendation that during this phase out period additional controls designed to better manage the risks should be applied.

Conclusions

7.5 Upon reviewing all the information contained in the application and received from submitters including at the public hearing, the Committee accepts the Agency's evaluation that there are significant (non-negligible) risks associated with the use of azinphos methyl in New Zealand.

7.6 The Committee further notes that the only benefits of any significance are associated with the use of the substances on summerfruit, strawberry runner plants and potatoes.

7.7 Taking into account the approach to risk, the precautionary approach and the effects of the substances being unavailable, the Committee considers that the level of adverse effects (risks and costs) to the environment, human health, society and economy and the relationship of Māori to the environment, outweigh any positive effects (benefits) associated with the availability of azinphos methyl in New Zealand for all uses other than potatoes, summerfruit and strawberry runner plants.

7.8 The Committee has noted the submission received from Agcarm Inc about the implications of an immediate or "quick" prohibition on use of substances following reassessment. The Committee acknowledges that an immediate revocation of all azinphios methyl products would result in considerable cost to industry and that the use of alternatives will lead to increased costs for industry.

7.9 The Committee recognises that there are current uses of azinphos methyl for which there are no registered alternatives and in these cases the risks and benefits are finely balanced. A time limited approval for five years for these uses, to allow time for alternatives to be registered, has been applied because the benefits associated with these uses mitigate the risks/cost.

7.10 The Committee considered whether any variations or modifications should be made to the controls currently imposed under the approval for the Cotnion 200 Insecticide (HSR002486) and considered it appropriate to impose the new controls for the period of the five year phase out as set out in **Appendix 2 Table 2**.

8 Decision

8.1 Pursuant to section 63A(6) the Committee determines that in accordance with pursuant to section 29 of the Act and clause 27 of the methodology, the adverse effects of azinphos methyl and formulations containing azinphos methyl outweigh the positive effects for all cases except for use on potatoes, summerfruit and strawberry runner plants. However, for use on potatoes, summerfruit and strawberry plants the positive effects outweigh the adverse effects for five years for the purposes of developing alternative substances.

8.2 The Committee:

(a) declines the further importation, manufacture or use of azinphos methyl and formulations containing azinphos methyl under the following approvals:
- azinphos methyl; (Approval Number HSR002815);
- Suspension concentrate containing 350g/litre azinphos methyl (Approval Number HSR000160);
- Wettable powder containing 350g/kg azinphos methyl (Approval Number HSR000161);
- Cotnion 200 Insecticide (Approval Number HSR002486) except as provided in (b) below; and

revokes the approvals;

(b) subject to paragraphs 8.3 to 8.5 below, approves the importation, manufacture, and/or use of Cotnion 200 Insecticide (Approval Number HSR002486) until 31 December 2014 for use on:
- potato crops;
- summerfruit crops; and
- strawberry runner plants.

and the controls set out in **Table 1 Appendix 2** will continue in effect.

8.3 Within three months of the date of this decision, the new controls set out in **Appendix 2 Table 2** will apply (where applicable) in addition to those in **Appendix 2 Table 1**.

8.4 Cotnion 200 Insecticide (Approval Number HSR002486) must not be applied by aerial application and must not be available for use or used for domestic use from the date that this decision comes into effect;

8.5 By 1 January 2015, all then existing stocks of the substance must be used or disposed of in accordance with the storage and disposal controls set out in **Appendix 2**.

8.6 This decision will come into effect 28 days after publication of the direction in the New Zealand *Gazette*.

8.7 In accordance with clause 36(2)(b) of the Methodology, the Committee records that, in reaching these conclusions, it has applied the balancing tests in section 29 of the Act and clauses 26 and 27 of the Methodology and has also applied the relevant criteria in the decision path set out in the **Appendix 1** to this decision.

Helen Atkins Date:

Chair

Appendix 1: Decision path for reassessment of hazardous substances

Context

This decision path describes the decision-making process for the application to import and manufacture methyl parathion and formulations containing methyl parathion. This application is made under section 63 (Reassessment) of the HSNO Act, and determined under section 29 of the Act.

Introduction

The purpose of the decision path is to provide the Authority with guidance so that all relevant matters in the HSNO Act and the Methodology have been addressed. It does not attempt to direct the weighting that the Authority may decide to make on individual aspects of an application.

In this document 'section' refers to sections of the HSNO Act, and 'clause' refers to clauses of the ERMA New Zealand Methodology.

The decision path has two parts –

- **Flowchart** (a logic diagram showing the process prescribed in the Methodology and the HSNO Act to be followed in making a decision), and
- **Explanatory notes** (discussion of each step of the process).

Of necessity the words in the boxes in the flowchart are brief, and key words are used to summarise the activity required. The explanatory notes provide a comprehensive description of each of the numbered items in the flowchart, and describe the processes that should be followed to achieve the described outcome.

Decision path for applications to import or manufacture a hazardous substance, application made under section 28 of the Act and determined under section 29.

For proper interpretation of the decision path it is important to work through the flowchart in conjunction with the explanatory notes.

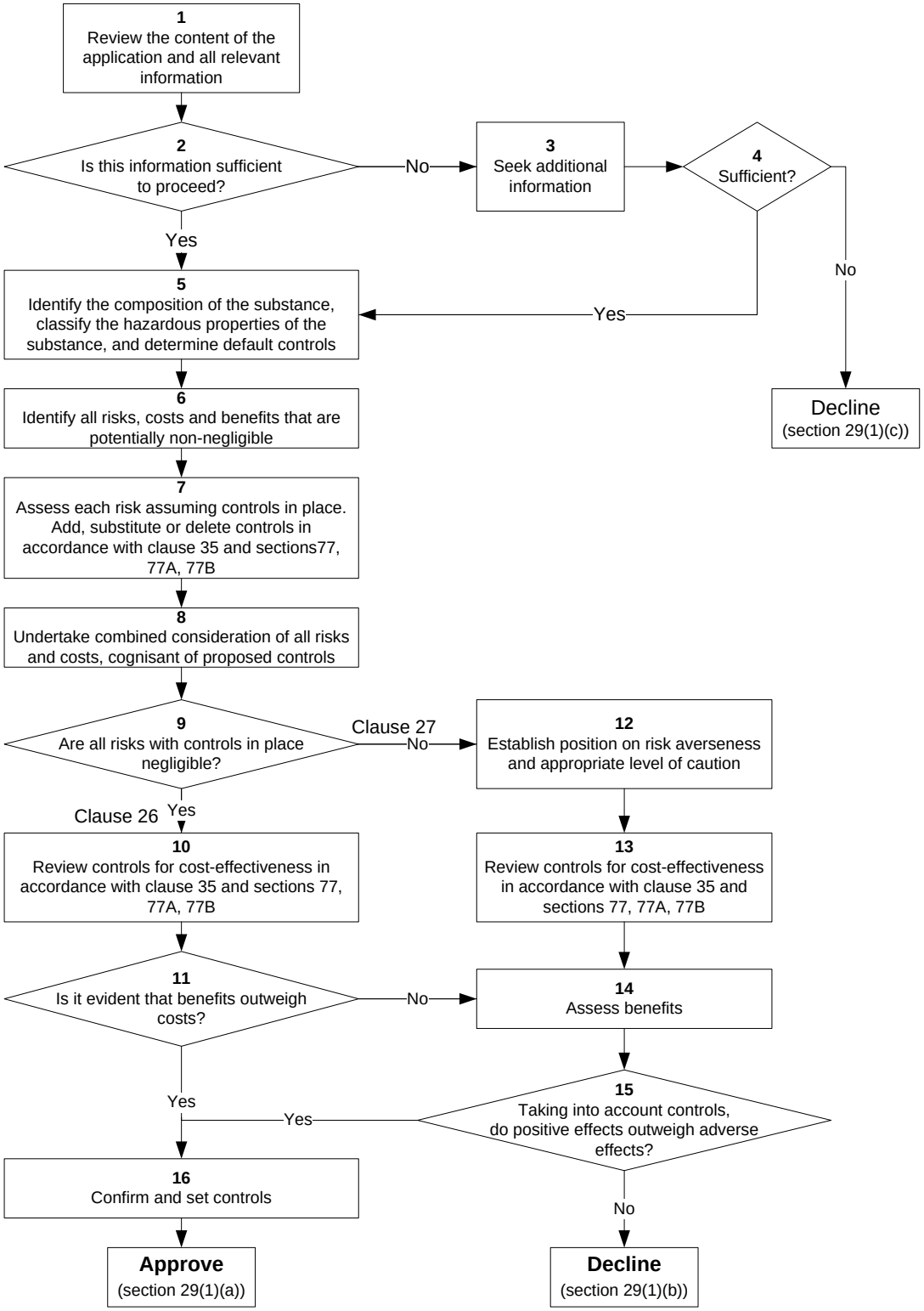

Figure updated: April 2008

Figure 1 EXPLANATORY NOTES

Item 1: Review the content of the application and all relevant information
Review the application, the E&R Report, and information received from experts and that provided in submissions (where relevant) in terms of section 28(2) of the Act and clauses 8, 15, 16 and 20 of the Methodology.

Item 2: Is this information sufficient to proceed?
Review the information and determine whether or not there is sufficient information available to make a decision.

The Methodology (clause 8) states that the information used by the Authority in evaluating applications shall be that which is appropriate and relevant to the application. While the Authority will consider all relevant information, its principal interest is in information which is significant to the proper consideration of the application; ie information which is "necessary and sufficient" for decision-making.

Item 3: (if no) Seek additional information
If there is not sufficient information then additional information may need to be sought from the applicant, the Agency or other parties/experts under section 58 of the Act (clause 23 of the Methodology).

Item 4 Sufficient?
When additional information has been sought, has this been provided, and is there now sufficient information available to make a decision?

If the Authority is not satisfied that it has sufficient information for consideration, then the application must be declined under section 29(1)(c).

Item 5: (If 'yes' from item 2 or from item 4) Identify the composition of the substance, classify the hazardous properties, and determine default controls
Identify the composition of the substance, and establish the hazard classifications for the identified substance.

Determine the default controls for the specified hazardous properties using the regulations 'toolbox'.

Item 6: Identify all risks, costs and benefits that are potentially non-negligible[5]
Costs and benefits are defined in the Methodology as the value of particular effects (clause 2). However, in most cases these 'values' are not certain and have a likelihood attached to them. Thus costs and risks are generally linked and may be addressed together. If not, they will be addressed separately. Examples of costs that might not be obviously linked to risks are direct financial costs that cannot be considered as 'sunk' costs (see footnote 1). Where such costs arise and they have a market economic effect they will be assessed in the same way as risks, but their likelihood of occurrence will be more certain (see also item 11).

[5] Relevant effects are **marginal effects**, or the changes that will occur as a result of the substance being available. Financial costs associated with preparing and submitting an application are not marginal effects and are not effects of the substance(s) and are therefore not taken into account in weighing up adverse and positive effects. These latter types of costs are sometimes called 'sunk' costs since they are incurred whether or not the application is successful.

Identification is a two step process that scopes the range of possible effects (risks, costs and benefits).

Step 1: Identify all possible risks and costs (adverse effects) and benefits (positive effects) associated with the approval of the substance(s), and based on the range of areas of impact described in clause 9 of the Methodology and sections 5 and 6 of the Act[6]. Consider the effects of the substance through its lifecycle (clause 11) and include the likely effects of the substance being unavailable (sections 29(1)(a)(iii) and 29(1)(b)(iii)).

Relevant costs and benefits are those that relate to New Zealand and those that would arise as a consequence of approving the application (clause 14).

Consider short term and long term effects.

Identify situations where risks and costs occur in one area of impact or affect one sector and benefits accrue to another area or sector; that is, situations where risks and costs do not have corresponding benefits.

Step 2: Document those risks, costs and benefits that can be readily concluded to be negligible[7], and eliminate them from further consideration.

Note that where there are costs that are not associated with risks some of them may be eliminated at this scoping stage on the basis that the financial cost represented is very small and there is no overall effect on the market economy.

Item 7: Assess each risk assuming controls in place. Add, substitute or delete controls in accordance with clause 35 and sections 77, 77A and 77B of the Act.

The assessment of potentially non-negligible risks and costs should be carried out in accordance with clauses 12, 13, 15, 22, 24, 25, and 29 to 32 of the Methodology. The assessment is carried out with the default controls in place.

Assess each potentially non-negligible risk and cost estimating the magnitude of the effect if it should occur and the likelihood of it occurring. Where there are non-negligible financial costs that are not associated with risks then the probability of occurrence (likelihood) may be close to 1. Relevant information provided in submissions should be taken into account.

The distribution of risks and costs should be considered, including geographical distribution and distribution over groups in the community, as well as distribution over time. This information should be retained with the assessed level of risk/cost.

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[6] Effects on the natural environment, effects on human health and safety, effects on Maori culture and traditions, effects on society and community, effects on the market economy.

[7] Negligible effects are defined in the Annotated Methodology as "Risks which are of such little significant in terms of their likelihood and effect that they do not require active management and/or after the application of risk management can be justified by very small levels of benefits.

This assessment includes consideration of how cautious the Authority will be in the face of uncertainty (section 7). Where there is uncertainty, it may be necessary to estimate scenarios for lower and upper bounds for the adverse effect as a means of identifying the range of uncertainty (clause 32). It is also important to bear in mind the materiality of the uncertainty and how significant the uncertainty is for the decision (clause 29(a)).

Consider the Authority's approach to risk (clause 33 of the Methodology) or how risk averse the Authority should be in giving weight to the residual risk, where residual risk is the risk remaining after the imposition of controls.
See ERMA New Zealand report 'Approach to Risk' for further guidance[8].

Where it is clear that residual risks are non-negligible and where appropriate controls are available, add substitute or delete controls in accordance with sections 77 and 77A of the Act to reduce the residual risk to a tolerable level. If the substance has toxic or ecotoxic properties, consider setting exposure limits under section 77B. While clause 35 is relevant here, in terms of considering the costs and benefits of changing the controls, it has more prominence in items 10 and 13

If changes are made to the controls at this stage then the approach to uncertainty and the approach to risk must be revisited.

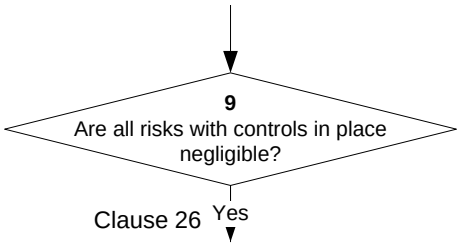
Item 8: Undertake combined consideration of all risks and costs, cognisant of proposed controls

Once the risks and costs have been assessed individually, if appropriate consider all risks and costs together as a 'basket' of risks/costs. This may involve combining groups of risks and costs as indicated in clause 34(a) of the Methodology where this is feasible and appropriate, or using other techniques as indicated in clause 34(b). The purpose of this step is to consider the interactions between different effects and determine whether these may change the level of individual risks.

Item 9: Are all risks with controls in place negligible?

Looking at individual risks in the context of the 'basket' of risks, consider whether all of the residual risks are negligible.

Item 10:



(from item 9 - if 'yes') Review controls for cost-effectiveness in accordance with clause 35 and sections 77, 77A and 77B

Where all risks are negligible the decision must be made under clause 26 of the Methodology.

Consider the practicality and cost-effectiveness of the proposed individual controls and exposure limits (clause 35). Where relevant and appropriate, add, substitute or

[8] http://www.ermanz.govt.nz/resources/publications/pdfs/ER-OP-03-02.pdf

delete controls whilst taking into account the view of the applicant, and the cost-effectiveness of the full package of controls.

Item 11: **Is it evident that benefits outweigh costs?**

Risks have already been determined to be negligible (item 9). In the unusual circumstance where there are non-negligible costs that are not associated with risks they have been assessed in item 7.

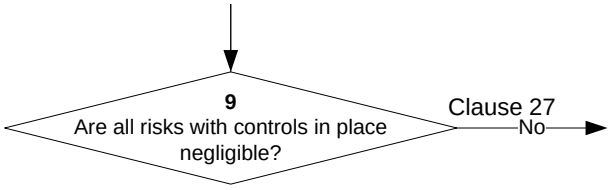
Costs are made up of two components: internal costs or those that accrue to the applicant, and external costs or those that accrue to the wider community.

Consider whether there are any non-negligible external costs that are not associated with risks.

If there are no external non-negligible costs then external benefits outweigh external costs. The fact that the application has been submitted is deemed to demonstrate existence of internal or private net benefit, and therefore total benefits outweigh total costs[9]. As indicated above, where risks are deemed to be negligible, and the only identifiable costs resulting from approving an application are shown to accrue to the applicant, then a cost-benefit analysis will not be required. The act of an application being lodged will be deemed by the Authority to indicate that the applicant believes the benefits to be greater than the costs.

However, if this is not the case and there are external non-negligible costs then all benefits need to be assessed (via item 14).

Item 12:



(from item 9 - if 'no') Establish Authority's position on risk averseness and appropriate level of caution

Although 'risk averseness' (approach to risk, clause 33) is considered as a part of the assessment of individual risks, it is good practice to consolidate the view on this if several risks are non-negligible. This consolidation also applies to the consideration of the approach to uncertainty (section 7)

Item 13: **Review controls for cost-effectiveness in accordance with clause 35 and sections 77, 77A and 77B**

This constitutes a decision made under clause 27 of the Methodology (taken in sequence from items 9 and 12).

Consider whether any of the non-negligible risks can be reduced by varying the controls in accordance with sections 77 and 77A of the Act, or whether there are available more cost-effective controls that achieve the same level of effectiveness (section 77A(4)(b) and clause 35(a)).

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[9] Technical Guide 'Risks, Costs and Benefits' page 6 - Note that, where risks are negligible and the costs accrue only to the applicant, no explicit cost benefit analysis is required. In effect, the Authority takes the act of making an application as evidence that the benefits outweigh the costs". See also Protocol Series 1 'General requirements for the Identification and Assessment of Risks, Costs, and Benefits'.

Where relevant and appropriate, add, substitute or delete controls whilst taking into account the views of the applicant (clause 35(b)), and making sure that the total benefits that result from doing so continue to outweigh the total risks and costs that result.

As for item 7, if the substance has toxic or ecotoxic properties, consider exposure limits under section 77B.

Item 14: **(if 'no' from item 11 or in sequence from item 13) Assess benefits**

Assess benefits or positive effects in terms of clause 13 of the Methodology.

Since benefits are not certain, they are assessed in the same way as risks. Thus the assessment involves estimating the magnitude of the effect if it should occur and the likelihood of it occurring. This assessment also includes consideration of the Authority's approach to uncertainty or how cautious the Authority will be in the face of uncertainty (section 7). Where there is uncertainty, it may be necessary to estimate scenarios for lower and upper bounds for the positive effect.

An understanding of the distributional implications of a proposal is an important part of any consideration of costs and benefits, and the distribution of benefits should be considered in the same way as for the distribution of risks and costs. The Authority will in particular look to identify those situations where the beneficiaries of an application are different from those who bear the costs[10]. This is important not only for reasons related to fairness but also in forming a view of just how robust any claim of an overall net benefit might be. It is much more difficult to sustain a claim of an overall net benefit if those who enjoy the benefits are different to those who will bear the costs. Thus where benefits accrue to one area or sector and risks and costs are borne by another area or sector then the Authority may choose to be more risk averse and to place a higher weight on the risks and costs.

As for risks and costs, the assessment is carried out with the default controls in place.

Item 15: **Taking into account controls, do positive effects outweigh adverse effects?**

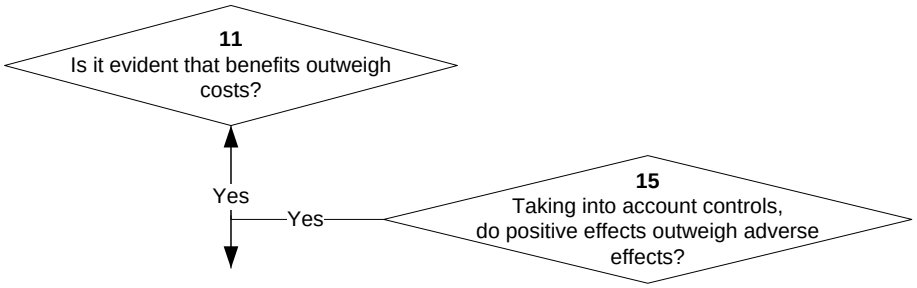
In weighing up positive and adverse effects, consider clause 34 of the Methodology. Where possible combine groups of risks, costs and benefits or use other techniques such as dominant risks and ranking of risks. The weighing up process takes into account controls proposed in items 5, 7, 10 and/or 13.

Where this item is taken in sequence from items 12, 13 and 14 (i.e. risks are not negligible) it constitutes a decision made under clause 27 of the Methodology.

Where this item is taken in sequence from items 9, 10, 11 and 14 (i.e. risks are negligible, and there are external non-negligible costs) it constitutes a decision made under clause 26 of the Methodology.

[10] This principle derives from Protocol Series 1, and is restated in the Technical Guide 'Risks, Costs and Benefits'.

Item 16:



(if 'yes' from items 11 or 15) Confirm and set controls

Controls have been considered at the earlier stages of the process (items 5, 7, 10 and/or 13). The final step in the decision-making process brings together all the proposed controls, and reviews them for overlaps, gaps and inconsistencies. Once these have been resolved the controls are confirmed.

Appendix 2: Gazette Notice

Hazardous Substances (Reassessment of azinphos methyl) Direction Notice 2009

Pursuant to sections 63A and 66 of the Hazardous Substances and New Organisms Act 1996 ("the Act"), the Environmental Risk Management Authority issues the following notice.

N o t i c e

1. Title—This notice is the Hazardous Substances (Azinphos methyl and formulations containing azinphos methyl Direction Restricting/Prohibiting Use and Controlling Storage and Disposal) Notice 2009.

2. Commencement—This notice comes into force 28 days after the date of notification in the *New Zealand Gazette*.

3. Interpretation—(1) In this notice, words and phrases have the meanings given to them in the Act and in Regulations made under the Act.

(2) In this notice, the following words have the following meanings:

Collector means a person, other than the holder, who collects, transports or stores azinphos methyl and formulations containing azinphos methyl, for the purpose of disposal, in accordance with this notice.

Environmentally sound disposal means disposal in accordance with clause 7 of this notice.

Holder means a person who is in possession of azinphos methyl and formulations containing azinphos methyl on or after the date this notice comes into force prior to collection by a collector.

4. Prohibition on use—(1) No person may use azinphos methyl (Approval Number HSR002815); suspension concentrate containing 350g/litre azinphos methyl (Approval Number HSR000160) or wettable powder containing 350g/kg azinphos methyl (Approval Number HSR000161) after the date of commencement of this notice.

(2) No person may use Cotnion 200 Insecticide (Approval Number HSR002486) after the expiry of 31 December 2014.

5. Controls on use of Cotnion 200 Insecticide 31 December2014—The controls set out in Table 1 of the Appendix to this notice will continue in effect until the expiry of 31 December 2014. The new controls set out in Table 2 of the Appendix will apply (where applicable) in addition to those in Table 1 of the Appendix. These new controls come into force 12 February 2010.

6. Additional controls—The controls in 7, 8 and 9 apply from the data that this notice comes into effect.

7. Storage of azinphos methyl and formulations containing azinphos methyl—Holders and collectors must ensure that azinphos methyl, and formulations containing azinphos methyl, are only stored in suitable containers and kept in buildings and places which are:

(a) secure and suitable for the purpose taking into account the quantities stored, moisture control ventilation and spill containment; and

(b) sited so that the risk of contamination of people, animals, crops and the environment is minimised.

8. Controls on the disposal of azinphos methyl and formulations containing—(1) Azinphos methyl and formulations containing azinphos methyl may be disposed of by:

(a) treating the substance using a method that changes the characteristics or composition of the substance so that the substance or any product of such treatment is no longer a hazardous substance; or

(b) exporting the substance from New Zealand as waste for environmentally sound disposal provided that such export complies with the relevant requirements of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the OECD Decision C(2001)107 on the Control of Transboundary Movement of Wastes Destined for Recovery Operations.

(2) In subclause (1)(a), treating the substance does not include:

(a) (save in the case of use of Cotnion 200 Insecticide in accordance with the controls set out in the Appendix to this notice before the expiry of 31 December 2014) application to or discharge to any environmental medium; or

(b) dilution of the substance with any other substance before discharge into the environment; or

(c) depositing the substance in a landfill or a sewage facility; or

(d) depositing the substance in an incinerator unless in doing so the substance is treated in accordance with subclause (1)(a).

(3) All stocks of azinphos methyl and formulations containing azinphos methyl must be used or disposed of by the expiry of 31 December 2014.

9. Controls on collectors of azinphos methyl and formulations containing azinphos methyl—(1) A collector must ensure that equipment used to handle the substance complies with regulation 7 of the Hazardous Substances (Class 6, 8, and 9 Controls) Regulations 2001.

(2) A collector who handles azinphos methyl and formulations containing azinphos methyl must comply with regulation 8 of the Hazardous Substances (Class 6, 8, and 9 Controls) Regulations 2001.

(3) Regulation 9 of the Hazardous Substances (Class 6, 8, and 9 Controls) Regulations 2001 applies to any quantity of azinphos methyl and formulations containing azinphos methyl.

(4) For the purposes of regulation 10 of the Hazardous Substances (Class 6, 8, and 9 Controls) Regulations 2001, no azinphos methyl and formulations containing azinphos methyl in any quantity may be carried on any passenger service vehicle.

(5) When stored for the purpose of environmentally sound disposal, azinphos methyl and formulations containing azinphos methyl must not be mixed with any other substance.

(6) The Hazardous Substances (Packaging) Regulations 2001 apply to azinphos methyl and formulations containing azinphos methyl as if they are deemed to have a hazard classification that is class 6.1B. Transport of azinphos methyl and formulations containing azinphos methyl by land within New Zealand shall comply with all relevant requirements of the Land Transport Rule: Dangerous Goods 2005 (Rule 45001/1).

(7) Transport of azinphos methyl and formulations containing azinphos methyl by sea within New Zealand shall comply with all relevant requirements of either the Maritime Rules: Part 24A – Carriage of Cargoes – Dangerous Goods (MR024A) or the International Maritime Dangerous Goods Code.

(8) Transport of azinphos methyl and formulations containing azinphos methyl by air within New Zealand shall comply with all relevant requirements of Part 92 of the Civil Aviation Rules.

(9) The Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004 apply to azinphos methyl and formulations containing azinphos methyl stored or transported in a tank, tank wagon or transportable container as those terms are defined in those Regulations.

(10) The location and movement of azinphos methyl and formulations containing azinphos methyl must be recorded in accordance with the Hazardous Substances (Tracking) Regulations 2001.

(11) The Hazardous Substances (Emergency Management) Regulations 2001 apply to azinphos methyl and formulations containing azinphos methyl as if they are deemed to have hazard classifications that are class 6.1B and 9.1A.

(12) The Hazardous Substances (Identification) Regulations 2001 apply to azinphos methyl and formulations containing azinphos methyl as if they are deemed to have hazard classifications that are class 6.1B and 9.1A.

Dated at Wellington this 5th day of November 2009.

For and on behalf of the Environmental Risk Management Authority:

Helen Atkins.

Appendix to Gazette Notice: Controls for Cotnion 200 Insecticide

Table 1: Controls applicable to Cotnion 200 Insecticide

Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001		
Code T1	Regs 11 – 27	Limiting exposure to toxic substances through the setting of tolerable exposure limits
Code T2	Regs 29, 30	Controlling exposure in places of work through the setting of workplace exposure standards (WES). (AWES has been set by the Department of Labour for azinphos methyl: 0.2 mg/m3 Time Weighted Average (TWA) based on skin absorption. This value has been adopted for Cotnion 200).
Code T3	Regs 5(1), 6	Requirements for keeping records of use
Code T4	Reg 7	Requirements for equipment used to handle substances
Code T5	Reg 8	Requirements for protective clothing and equipment
Code T6*	Reg 9	Approved handler/security requirements for certain toxic substances ***Changes to Default Controls*** **Regulation 9 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001** *The following regulation is inserted immediately after regulation 9:* ***9A Exception to approved handler requirement for transportation of packaged pesticides*** *(1) Regulation 9 is deemed to be complied with if:* *(a) when this substance is being transported on land—* *(i) by rail, the person who drives the rail vehicle that is transporting the substance is fully trained in accordance with the approved safety system for the time being approved under section 6D of the Transport Services Licensing Act 1989; and*

Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001		
		(ii) other than by rail, the person who drives, loads, and unloads the vehicle that is transporting the substance has a current dangerous goods endorsement on his or her driver licence; and *(iii) in all cases, Land Transport Rule: Dangerous Goods 1999 (Rule 45001) is complied with; or* *(b) when this substance is being transported by sea, one of the following is complied with:* *(i) Maritime Rules: Part 24A – Carriage of Cargoes – Dangerous Goods (MR024A):* *(ii) International Maritime Dangerous Goods Code; or* *(c) when this substance being transported by air, Part 92 of the Civil Aviation Rules is complied with.* *(2) Subclause (1)(a)—* *(a) does not apply to a tank wagon or a transportable container to which the Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004 applies; but* *(b) despite paragraph (a), does apply to an intermediate bulk container that complies with chapter 6.5 of the UN Model Regulations.* *(3) Subclause (1)(c)—* *(a) applies to pilots, aircrew, and airline ground personnel loading and managing this substance within an aerodrome; but* *(b) does not apply to—* *(i) the handling of this substance in any place that is not within an aerodrome; or* *(ii) the loading and managing of this substance for the purpose of aerial spraying or dropping.* (4) In this regulation, UN Model Regulations means the 15th revised edition of the Recommendation on the transport of Dangerous Goods Model Regulations, published in 2007 by the United Nations.
Code T7	Reg 10	Restrictions on the carriage of toxic or corrosive substances on passenger service vehicles
Code E1*	Regs 32–45	Limiting exposure to ecotoxic substances through the setting of EELs ***Changes to Default Controls*** **Regulation 32 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001** Regulation 32 applies as if subclauses (1) and (2) were omitted.
Code E2	Regs 46 – 48	Restrictions on use of substances in application areas
Code E3	Reg 49	Controls relating to protection of terrestrial invertebrates eg beneficial insects
Code E5	Regs 5(2), 6	Requirements for keeping records of use
Code E6	Reg 7	Requirements for equipment used to handle substances
Code E7*	Reg 9	Approved handler/security requirements for certain ecotoxic substances ***Changes to Default Controls*** This regulation applies as if subclause (1) was omitted and the following substituted: (1) A hazardous substance to which this regulation applies must be under the personal control of an approved handler when the substance is applied in a wide dispersive manner.

Hazardous Substances (Packaging) Regulations 2001

Code P1	Regs 5, 6, 7(1), 8	General packaging requirements
Code P3	Reg 9	Criteria that allow substances to be packaged to a standard not meeting Packing Group I, II or III criteria
Code P13	Reg 19	Packaging requirements for toxic substances
Code P14	Reg 20	Packaging requirements for corrosive substances
Code P15	Reg 21	Packaging requirements for ecotoxic substances
Code PG2	Schedule 2	Packaging requirements equivalent to UN Packing Group I
Code PG2	Schedule 2	Packaging requirements equivalent to UN Packing Group II
Code PG3	Schedule 3	Packaging requirements equivalent to UN Packing Group III
Code PS4	Schedule 4	Packaging requirements as specified in Schedule 4

Hazardous Substances (Disposal) Regulations 2001		
Code D4	Reg 8	Disposal requirements for toxic and corrosive substances
Code D5	Reg 9	Disposal requirements for ecotoxic substances
Code D6	Reg 10	Disposal requirements for packages
Code D7	Regs 11, 12	Information requirements for manufacturers, importers and suppliers, and persons in charge
Code D8	Regs 13, 14	Documentation requirements for manufacturers, importers and suppliers, and persons in charge

Hazardous Substances (Personnel Qualifications) Regulations 2001		
Code AH1	Regs 4 – 6	Approved Handler requirements (including test certificate and qualification requirements)

Hazardous Substances (Tracking) Regulations 2001		
Code TR1	Regs 4(1), 5, 6	General tracking requirements

Hazardous Substances (Emergency Management) Regulations 2001		
Code EM1	Regs 6, 7, 9 – 11	Level 1 information requirements for suppliers and persons in charge
Code EM2	Reg 8(a)	Information requirements for corrosive substances
Code EM6	Reg 8(e)	Information requirements for toxic substances
Code EM7	Reg 8(f)	Information requirements for ecotoxic substances
Code EM8	Regs 12- 16, 18-20	Level 2 information requirements for suppliers and persons in charge
Code EM11	Regs 25 – 34	Level 3 emergency management requirements: duties of person in charge, emergency response plans
Code EM12*	Regs 35 – 41	Level 3 emergency management requirements: secondary containment ***Change to Default Controls*** **Regulations 35- 42 of the Hazardous Substances (Emergency Management) Regulations 2001** *The following subclauses are added after subclause (3) of regulation 36:* *(4) For the purposes of this regulation, and regulations 37 to 40, where this substance is contained in pipework that is installed and operated so as to manage any loss of containment in the pipework it—* *(a) is not to be taken into account in determining whether a place is required to hav a secondary containment system; and*

		(b) is not required to be located in a secondary containment system. *(5) In this clause, pipework—* *(a) means piping that—* *(i) is connected to a stationary container; and* *(ii) is used to transfer a hazardous substance into or out of the stationary container; and* (b) includes a process pipeline or a transfer line.
Code EM13	Reg 42	Level 3 emergency management requirements: signage

Hazardous Substances (Identification) Regulations 2001		
Code I1	Regs 6, 7, 32–35, 36(1) – (7)	Identification requirements, duties of persons in charge, accessibility, comprehensibility, clarity and durability
Code I3	Reg 9	Priority identifiers for ecotoxic substances
Code I8	Reg 14	Priority identifiers for toxic substances
Code I9	Reg 18	Secondary identifiers for all hazardous substances
Code I11	Reg 20	Secondary identifiers for ecotoxic substances
Code I16	Reg 25	Secondary identifiers for toxic substances
Code I17	Reg 26	Use of generic names
Code I18	Reg 27	Requirements for using concentration ranges
Code I19	Regs 29 – 31	Additional information requirements, including situations where substances are in multiple packaging
Code I20	Reg 36(8)	Durability of information for class 6.1 substances
Code I21	Regs 37- 39, 47-50	General documentation requirements
Code I23	Reg 41	Specific documentation requirements for ecotoxic substances
Code I28	Reg 46	Specific documentation requirements for toxic substances
Code I29	Regs 51, 52	Signage requirements
Code I30	Reg 53	Advertising corrosive and toxic substances

Hazardous Substances (Tank Wagon and Transportable Containers) Regulations 2004

Controls for Stationary Container Systems
These controls are set out in Schedule 8 of the Hazardous Substances (Hazardous Substances (Dangerous Goods and Schedule Toxic Substances) Transfer Notice 2004. The requirements of this schedule are detailed in the Compilation of Hazardous Substances Regulations and Controls (http://www.ermanz.govt.nz/hs/hs-_regulations.html). ***Change to Controls*** **Schedule 8 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004** *Clause 1: This clause applies as if the words "a hazardous substance described in Schedules 1 and 2" in subclause (1) was replaced by:* *"this substance".* *Clause 100: This clause applies as if subclause (1) was replaced by:* *(1) In this Part, existing stationary container system means a stationary container system to which this Schedule applies that, immediately before 1 July 2004,—* *(a) was being used to contain this substance; or* (b) was designed to be used to contain this substance, and construction of the

stationary container system to that design had commenced.

Table 2: New controls applicable to Cotnion 200 Insecticide

Receptor	Crop	New Control
Operator exposure	Summerfruit	Mixers/loaders must wear: • Coveralls over long-sleeved shirt, long-legged trousers. • Chemical resistant gloves. • Chemical resistant footwear plus socks. • Protective eyewear. • Chemical resistant headgear for overhead exposures. • For exposure in enclosed areas, a respirator with either an organic vapour-removing cartridge with a prefilter approved for pesticides, or a canister approved for pesticides. • For exposure outdoors, dust/mist filtering respirator. Applicators must use a closed cab with appropriate filtering system and have the above RPE (respiratory protective equipment) and PPE (personal protective equipment) immediately available for use if leaving the cab in the treated area, and a system for storing the used RPE and PPE to prevent contamination of the cab. At least long-sleeved shirt and long-legged trousers, footwear plus socks should be worn in the functioning enclosed cab.
	Potato and strawberry	PPE to be worn during mixing/loading and application should comprise at least: • Coveralls over long-sleeved shirt, long-legged trousers. • Chemical resistant gloves. • Chemical resistant footwear plus socks. • Protective eyewear. • For exposure in enclosed areas, a respirator with either an organic vapour-removing cartridge with a prefilter approved for pesticides, or a canister approved for pesticides. • For exposure outdoors, dust/mist filtering respirator.
Re-entry workers exposure to residues- Contact Definition of Contact: contact with anything that was sprayed	Summerfruit, potato & strawberry	REI[11]: • Summer Fruit 0-7 days Full PPE • Summer Fruit 8-14 days Reduced PPE • Potatoes 0-7 days Full PPE • Potatoes 8-14 days Reduced PPE plus long trousers • Strawberry runners 0-7 days Full PPE • Strawberry trousers runners 8-14 days Reduced PPE plus long PPE requirement for entry during REI. Full PPE to comprise: • Coveralls over long-sleeved shirt, long-legged trousers. • Chemical resistant gloves.

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Receptor	Crop	New Control
		• Chemical resistant footwear plus socks. • Protective eyewear. • Chemical resistant headgear for overhead exposures. Reduced PPE to comprise: • Coveralls over long-sleeved shirt • Cotton gloves. • Boots plus socks. • Hat
Re-entry workers exposure to residues- Non Contact Definition of Non Contact: no intentional contact with anything that was sprayed		REI[12]: • Summer Fruit 0-3 days Reduced PPE • Potatoes No PPE requirements • Strawberry 0-3 days Reduced PPE plus long trousers runners Reduced PPE to comprise: • Coveralls over long-sleeved shirt • Cotton gloves. • Boots plus socks. • Hat
Bystander exposure	Summerfruit	Buffer zone upwind of public areas or the nearest farm buildings or dwellings to exceed 50 m. Buffer zone areas may not include employee housing, private property and other areas people may occupy Definition of public areas: any place where members of the public can legally be.
Aquatic environment (aquatic)	Summerfruit, potato & strawberry	Buffer zones upwind of waterways to exceed 50 m. definition of a waterway: waterways including modified water courses such as reservoirs, irrigation canals, water-supply races, canals for the supply of water for electricity generation or farm drainage canals, as well as natural water bodies.
Other Controls		
Limiting the number of applications per year	Summerfruit, potato & strawberry	Limited to 2 applications per year
New Labelling requirements	Summerfruit and potatoes	New stock must be labelled with new requirements 3 months after this decision comes into effect Stocks with old labels may not be sold after 12 months after this decision comes into effect.

[12] REI – Restricted Entry Interval