



Proposals to Amend (No. 1) the New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards 2011

MAF Discussion Paper No: 2011/3

Biosecurity and Food Policy

ISBN 978-0-478-37593-0 (online)

ISSN 2230-2816 (online)

April 2011



Ministry of Agriculture and Forestry
Te Manatū Ahuwhenua, Ngāherehere



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Submissions	1
1. INTRODUCTION	2
1.1. Background	2
1.2. Summary of Proposed Amendment	3
1.3. Next steps	3
2. PROPOSALS	4
2.1. Proposal to set an MRL for Forchlorfenuron	4
2.2. Proposal to set an MRL for Thiacloprid	5
2.3. Proposal to set an MRL for Spirotetramat	7
2.4. Proposal to set MRLs for Phosphine	8
2.5. Proposal to set MRLs for Nicarbazin	10
2.6 Proposal to exempt Didecyl Dimethyl Ammonium Chloride from an MRL	12
2.7. Proposal to exempt Ethylene from an MRL	13
2.8. Proposal to extend the exemption of Phosphorus acid from an MRL	14
2.9. Proposal to exempt Lecirelin from an MRL	14

Submissions

The Ministry of Agriculture and Forestry (MAF) – that now incorporates the New Zealand Food Safety Authority (NZFSA) - invites public comment on this discussion document which outlines **proposals to amend the New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards 2011**.

The following points may be of assistance in preparing comments:

- Wherever possible, comment should be specific to a particular section in the document. All major sections are numbered and these numbers should be used to link comments to the document.
- Where possible, reasons and data to support comments are requested.
- The use of examples to illustrate particular points is encouraged.
- As a number of copies may be made of your comments, please use good quality type, or make sure the comments are clearly hand-written in black or blue ink.

Please include the following information in your submission:

- The title of the discussion document;
- Your name and title (if applicable);
- Your organisation's name (if applicable); and
- Your address.

Please submit your response by 5:00pm on Friday 1 July 2011. Your comments should be sent to:

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1. INTRODUCTION

Maximum residue limits (MRLs) are the maximum legal limits for residues of agricultural compounds and veterinary medicines in food for sale in New Zealand. MRLs are primarily a tool for monitoring the use of agricultural compounds in accordance with good agricultural practice (GAP). GAP is not explicitly defined or regulated, but is the generally accepted means for producing safe primary produce in a particular location while taking account of climate, pests or diseases and other environmental factors. MRLs are used to minimise risks to public health by ensuring that chemical residues in food are as low as practicable, without compromising the ability of the chemical to successfully do what is intended.

1.1. BACKGROUND

MRLs are set out in the New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards (the MRL Standards). The MRL Standards are amended a number of times each year to reflect changes in the use of agricultural compounds in the production of food. The MRL Standards 2011 are on the MAF Foodsafety website at: <http://www.foodsafety.govt.nz/elibrary/industry/NZ-MRL-of-Agricultural-Compounds-Food-Standards-2011.pdf>

MAF administers the MRL Standards, but the final decision on any changes to the MRL Standards rests with the Minister for Food Safety. Under section 11E of the Food Act 1981, when amending or issuing the MRL Standards, the Minister must take into account the following:

- The need to protect public health;
- The desirability of avoiding unnecessary restrictions on trade;
- The desirability of maintaining consistency between New Zealand's food standards and those applying internationally;
- New Zealand's obligations under any relevant international treaty, agreement, convention, or protocol, and, in particular, under the Australia-New Zealand Joint Food Standards Agreement; and
- Such other matters as the Minister considers appropriate.

Possible implications for public health are considered during the toxicological and dietary risk assessments, by comparing the estimated dietary intake with a Potential Daily Exposure (food) (PDE_{food}) or where there is no PDE_{food} , by comparing it with the Acceptable Daily Intake (ADI). PDE_{food} and ADI are described below.

A PDE_{food} or Potential Daily Exposure (food), is a value determined by a toxicological evaluation by Environmental Risk Management Authority New Zealand (ERMA NZ) as part of its responsibilities under the Hazardous Substances and New Organisms Act 1996 (the HSNO Act), which has some responsibility for managing public health.¹ A PDE_{food} gives the potential daily exposure a person may be subject to from a substance, via food. MAF uses a PDE_{food} , rather than the internationally-determined ADI, where a PDE_{food} is available, due to the HSNO Act in New Zealand. The ADI and PDE_{food} are largely equivalent, as they are determined using the same set of toxicology data and in a very similar scientific process.

An ADI or Acceptable Daily Intake is defined by the World Health Organization (WHO) as: “the daily intake which, during an entire lifetime, appears to be without appreciable risk on the basis of all the known facts at the time”. “Without appreciable risk” has been further defined as: “the practical certainty that injury will not result even after a lifetime of

¹The purpose of the HSNO Act 1996 is “to protect the environment, and the health and safety of people and communities, by preventing or managing the adverse effects of hazardous substances and new organisms”.

exposure". ADIs are established by the WHO and Food and Agriculture Organization of the United Nations (FAO) joint expert committees, made up of toxicologists and residue specialists. The ADI information from these joint committees also feeds into the Codex Alimentarius Commission (Codex), which sets international MRLs.

1.2. SUMMARY OF PROPOSED AMENDMENT

The proposed MRLs have been thoroughly assessed in accordance with international methodologies such as those utilised by the expert committees advising the Codex Alimentarius Commission (Codex). Information on the technical assessment of each proposal is included in this document (refer section 2) and covers the following:

- Rationale;
- chemical information;
- good agricultural practice (GAP);
- residues information;
- dietary risk assessment;
- toxicological / public health assessment; and
- international MRLs.

MAF reviewed the estimated dietary exposure assessments for the application of the proposals in this discussion paper and has determined that the residues associated with the proposed MRLs do not present any public health and safety concerns.

New MRLs

MAF proposes to add the following new MRLs to the MRL Standards:

- 0.01mg/kg for forchlorfenuron when used as a plant growth regulator on apples;
- 0.02mg/kg for thiacloprid when used as an insecticide on potatoes;
- 0.3mg/kg for spirotetramat when used as an insecticide on tomatoes;
- 0.01mg/kg, and 0.05mg/kg for phosphine when used as an insecticide on: any food (except cereal grains and pome fruits); and pome fruits (respectively); and
- 9mg/kg, 4mg/kg, and 4mg/kg for nicarbazin when used as a coccidiostat on poultry: edible offal; muscle; and skin/fat (respectively).

MRL Exemptions

MAF proposes to exempt the following MRLs from the MRL Standards:

- Didecyl Dimethyl Ammonium Chloride when applied as a fungicide on pipfruits;
- Ethylene when used for ripening and de-greening of fruits; and
- Phosphorous acid when directly used as an agricultural compound, and a representative of the use of fosetyl aluminium as an agricultural compound; and
- Lecirelin when used as a treatment of fertility disorders of ovarian origin and/or anoestrus, for the purpose of inducing ovulation and increasing conception rates in cattle, horses, and rabbits.

1.3. NEXT STEPS

Following the closing date for submissions **5:00pm on Friday 1 July 2011**, all submissions will be considered and analysed before a recommendation is made to the Minister for Food Safety, who makes the final decision on issuing any amendments to the MRL Standards.

If an amendment is agreed upon, it will be signed by the Minister for Food Safety and will come into force 28 days after being published in the *New Zealand Gazette*.

2. PROPOSALS

2.1. PROPOSAL TO SET AN MRL FOR FORCHLORFENURON

It is proposed that an MRL is set for forchlorfenuron when used on apples. It is proposed that Schedule One of the MRL Standards be amended to include the following, and that this will be the resulting entry for forchlorfenuron in Schedule One of the MRL Standards:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Forchlorfenuron	68157-60-8	Forchlorfenuron	Apples	0.01(*)

NOTE: (*) indicates that the MRL has been set at or about the limit of analytical quantification.

Amendment Rationale

The proposed MRL represents a new use pattern in New Zealand for the active ingredient forchlorfenuron. The proposed MRL will manage the use of forchlorfenuron as a plant growth regulator in apples, to the application rates and withholding periods that are proposed as GAP in New Zealand.

Chemical Information

Common name of compound	Forchlorfenuron
Use of compound	Plant growth regulator
Chemical Abstract Services (CAS) Registry number	68157-60-8
Type of compound	Phenylurea
Administration method	Spray

Good Agricultural Practice (GAP)

Forchlorfenuron is proposed for use as a plant growth regulator for fruit sizing in apples. Application is as a single foliar spray, at a rate of 0.5–1gai/100L forchlorfenuron in 2000L water/ha (10–20gai/ha), made no later than when fruit size measured as an average of king fruit across the tree are 10mm in diameter.

Residues Information

The residue data for apples supports a limit of quantification MRL of 0.01mg/kg for forchlorfenuron when the last treatment is made no later than when fruit size measured as an average of king fruit across the tree are 10mm in diameter. An MRL of 0.01mg/kg is proposed to support GAP.

Dietary Risk Assessment

Acceptable Daily Intake	0.15mg/kg bw/day
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The potential daily exposure via food (PDE_{food}) is used for dietary intake calculation where a value has been set. An appropriate acceptable daily intake (ADI) is used in the absence of a PDE_{food} .

The chronic dietary exposure to forchlorfenuron is estimated by the National Estimated Dietary Intake (NEDI) calculation encompassing all registered uses of the chemical and food consumption data based upon the 1997 National Nutritional Survey for adults and the 1995 National Nutrition Survey of Australia, for children. The NEDI calculation is made in accordance with *Guidelines for predicting dietary intake of pesticide residues (revised)* [World Health Organization, 1997].

The NEDI for forchlorfenuron is equivalent to less than 0.05% of the ADI. It is therefore concluded that the chronic dietary exposure is small and the risk is acceptable.

Toxicological / Public Health Assessment

It has been determined that the use of forchlorfenuron as a plant growth regulator in apples according to GAP (specified above), is very unlikely to pose any health risks from consumption of treated produce.

Other International MRLs

Compound	Food	Maximum Residue Limit (mg/kg)
European Commission		
Forchlorfenuron	Apples (Crab apple)	0.05*
Japan		
Forchlorfenuron	Apple	0.1

Under Provision 6(3)(b) of the MRL Standards imported food may contain residues of agricultural compounds no greater than the MRLs specified for that food in the current editions or supplements of the FAO/WHO Codex Alimentarius Commission publications *Pesticide Residues in Food* or *Residues of Veterinary Drugs in Foods*.

To meet New Zealand's obligations under the Agreement on the Application of Sanitary and Phytosanitary Measures the proposed MRL will be notified to the World Trade Organization. Any country may choose to comment if they believe the proposed MRL represents a barrier to their trade.

2.2. PROPOSAL TO SET AN MRL FOR THIACTLOPRID

It is proposed that an MRL is set for thiacloprid when used as an insecticide on potatoes. It is proposed that Schedule One of the MRL Standards be amended to include the following:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Thiacloprid	111988-49-9	Thiacloprid	Potatoes	0.02 (*)

NOTE: (*) indicates that the MRL has been set at or about the limit of analytical quantification.

The final entry for thiacloprid in Schedule One of the MRL Standards will therefore read:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Thiacloprid	111988-49-9	Thiacloprid	Avocados	0.05
			Kiwifruit	0.02 (*)
			Onions	0.01 (*)
			Pomefruits	0.3
			Potatoes	0.02 (*)
			Stonefruits (except cherries)	0.02 (*)

Amendment Rationale

The proposed MRL represents a new use pattern in New Zealand for the active ingredient thiacloprid. The proposed MRL will manage the use of thiacloprid as an insecticide to control aphids, potato tuber moth and tomato/potato psyllid for potatoes, to the application rates and withholding periods that are proposed as GAP in New Zealand.

Chemical Information

Common name of compound	Thiacloprid
Use of compound	Insecticide
Chemical Abstract Services (CAS) Registry number	111988-49-9
Type of compound	Neonicotinoid
Administration method	Spray

Good Agricultural Practice (GAP)

Thiacloprid is proposed for use as an insecticide for potatoes. For aphids and potato tuber moth, application is at first appearance and repeated at 14–21 days with the application rate of 75gai/ha. For potato/tomato psyllids, application is up to two applications at 97.5gai/ha and a 7–10 day interval as part of a programme with sufficient water for good coverage of all foliage.

Residues Information

The residue data for potatoes supports a limit of quantification MRL of 0.02mg/kg for thiacloprid when the last treatment is 14 days prior to harvest. An MRL of 0.02 mg/kg is proposed to support GAP.

Dietary Risk Assessment

Acceptable Daily Intake	0.01mg/kg bw/day
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The potential daily exposure via food (PDE_{food}) is used for dietary intake calculation where a value has been set. An appropriate acceptable daily intake (ADI) is used in the absence of a PDE_{food} .

The chronic dietary exposure to thiacloprid is estimated by the National Estimated Dietary Intake (NEDI) calculation encompassing all registered uses of the chemical and food consumption data based upon the 1997 National Nutritional Survey for adults and the 1995 National Nutrition Survey of Australia, for children. The NEDI calculation is made in accordance with *Guidelines for predicting dietary intake of pesticide residues (revised)* [World Health Organization, 1997].

The NEDI for thiacloprid is equivalent to less than 5% of the ADI. It is therefore concluded that the chronic dietary exposure is small and the risk is acceptable.

Toxicological / Public Health Assessment

It has been determined that the use of thiacloprid as an insecticide for potatoes according to the GAP specified above, is very unlikely to pose any health risks from consumption of treated produce.

Other International MRLs

Compound	Food	Maximum Residue Limit (mg/kg)
Codex Alimentarius		
Thiacloprid	Potatoes	0.02
European Commission		
Thiacloprid	Potatoes	0.02*
Japan		
Thiacloprid	Potatoes	0.1

Under Provision 6(3)(b) of the MRL Standards imported food may contain residues of agricultural compounds no greater than the MRLs specified for that food in the current editions or supplements of the FAO/WHO Codex Alimentarius Commission publications *Pesticide Residues in Food* or *Residues of Veterinary Drugs in Foods*.

To meet New Zealand's obligations under the Agreement on the Application of Sanitary and Phytosanitary Measures the proposed MRL will be notified to the World Trade Organization. Any country may choose to comment if they believe the proposed MRL represents a barrier to their trade.

2.3. PROPOSAL TO SET AN MRL FOR SPIROTETRAMAT

It is proposed that an MRL is set for spirotetramat when used as an insecticide for tomatoes. It is proposed that Schedule One of the MRL Standards be amended to include the following:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Spirotetramat	203313-25-1	<i>Sum of:</i> Spirotetramat and its enol metabolite <i>Expressed as:</i> Spirotetramat	Tomatoes	0.3

The final entry for spirotetramat in Schedule One of the MRL Standards will therefore read:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Spirotetramat	203313-25-1	<i>Sum of:</i> Spirotetramat and its enol metabolite <i>Expressed as:</i> Spirotetramat	Kiwifruit Potatoes Tomatoes	0.1 0.5 0.3

Amendment Rationale

The proposed MRLs represent a new use in New Zealand for the active ingredient spirotetramat. The proposed MRL will manage the new use of spirotetramat as an insecticide to control potato/tomato psyllid in tomatoes, to the application rates and withholding periods that are proposed as GAP in New Zealand.

Chemical Information

Common name of compound	Spirotetramat
Use of compound	Insecticide
Chemical Abstract Services (CAS) Registry number	203313-25-1
Type of compound	Tetramic acid
Administration method	Spray

Good Agricultural Practice (GAP)

Spirotetramat is proposed for use as an insecticide for tomatoes. Application is twice early in the season as a full foliage cover spray, 7 days apart, at a rate of 84gai/ha.

Residues Information

Residue data for tomatoes supports an MRL of 0.3mg/kg for spirotetramat when the last treatment is 35 days prior to harvest. An MRL of 0.3mg/kg is therefore proposed to support GAP.

Dietary Risk Assessment

Potential Daily Exposure	0.004mg/kg bw/day
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The potential daily exposure via food (PDE_{food}) is used for dietary intake calculation where a value has been set.

The PDE_{food} is a value set by the Environmental Risk Management Authority New Zealand (ERMA NZ), which represents the proportion of the acceptable daily exposure (ADE) to a substance via the food route as relevant to the New Zealand population. The methodology for calculation of these values is set out in the Hazardous Substances (classes 6, 8, and 9 controls) Regulations 2001 and can be found at www.legislation.govt.nz.

The chronic dietary exposure to spirotetramat is estimated by the National Estimated Dietary Intake (NEDI) calculation encompassing all registered uses of the chemical and food consumption data based upon the 1997 National Nutritional Survey for adults and the 1995 National Nutrition Survey of Australia, for children. The NEDI calculation is made in accordance with *Guidelines for predicting dietary intake of pesticide residues (revised)* [World Health Organization, 1997].

The NEDI for spirotetramat is equivalent to less than 30% of the PDE_{food} . It is therefore concluded that the chronic dietary exposure is small and the risk is acceptable.

Toxicological / Public Health Assessment

It has been determined that the use of spirotetramat as an insecticide for tomatoes, according to the GAP specified above, is very unlikely to pose any health risks from consumption of treated produce.

Other International MRLs

Compound	Food	Maximum Residue Limit (mg/kg)
Australia		
Spirotetramat	Tomatoes	T[temporary]7
European Commission		
Spirotetramat	Tomatoes	2
Japan		
Spirotetramat	Tomatoes	1
United State of America		
Spirotetramat	Vegetable, fruiting, group 8	2.5

Under Provision 6(3)(b) of the NZ (MRL) Food Standards 2010 imported food may contain residues of agricultural compounds no greater than the MRLs specified for that food in the current editions or supplements of the FAO/WHO Codex Alimentarius Commission publications *Pesticide Residues in Food* or *Residues of Veterinary Drugs in Foods*.

To meet New Zealand's obligations under the Agreement on the Application of Sanitary and Phytosanitary Measures the proposed MRL will be notified to the World Trade Organization. Any country may choose to comment if they believe the proposed MRL represents a barrier to their trade.

2.4. PROPOSAL TO SET MRLS FOR PHOSPHINE

It is proposed that an MRL is set for phosphine when used as a fumigant for pome fruits. It is proposed that Schedule One of the MRL Standards be amended by deleting the following entry:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Phosphine	7803-51-2	Hydrogen phosphide (phosphine)	Any food (except cereal grains)	0.01

As a replacement for the deleted entry, is proposed that Schedule One of the MRL Standards be amended to include the following entry:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Phosphine	7803-51-2	Hydrogen phosphide (phosphine)	Any food (except cereal grains and pome fruits)	0.01
			Pome fruits	0.05

The final entry for phosphine in Schedule One of the MRL Standards will therefore read:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Phosphine	7803-51-2	Hydrogen phosphide (phosphine)	Any food (except cereal grains and pome fruits)	0.01
			Cereal grains	0.1(*)
			Pome fruits	0.05

NOTE: (*) indicates that the MRL has been set at or about the limit of analytical quantification.

Amendment Rationale

The proposed MRL represents an extension of the use pattern for the active ingredient phosphine. It will manage the extension of the use of phosphine as a fumigant to control codling moth eggs and larvae in pome fruits, to the application rates and withholding periods that are proposed as GAP in New Zealand.

Chemical Information

Common name of compound	Phosphine
Use of compound	Insecticide
Chemical Abstract Services (CAS) Registry number	7803-51-2
Type of compound	Fumigant
Administration method	Spray

Good Agricultural Practice (GAP)

Phosphine is used as an insecticide for pome fruits. It is to be applied at 2500ppm to fruit stored at 0–2°C at an exposure time of 96 hours. Pome fruits are then ventilated and withheld for two days before entering the food chain.

Residues Information

Residue data for the pome fruits supports an MRL of 0.05mg/kg for phosphine when pome fruit are withheld for 2 days following ventilation of the fumigation treatments. An MRL of 0.05mg/kg is therefore proposed to support GAP.

Dietary Risk Assessment

Potential Daily Exposure	0.0002mg/kg bw/day
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The potential daily exposure via food (PDE_{food}) is used for dietary intake calculation where a value has been set.

The PDE_{food} is a value set by the Environmental Risk Management Authority New Zealand (ERMA NZ), which represents the proportion of the acceptable daily exposure (ADE) to a substance via the food route as relevant to the New Zealand population. The methodology for calculation of these values is set out in the Hazardous Substances (classes 6, 8, and 9 controls) Regulations 2001 and can be found at www.legislation.govt.nz.

The chronic dietary exposure to phosphine is estimated by the National Estimated Dietary Intake (NEDI) calculation encompassing all registered uses of the chemical and food consumption data based upon the 1997 National Nutritional Survey for adults and the 1995 National Nutrition Survey of Australia, for children. The NEDI calculation is made in accordance with *Guidelines for predicting dietary intake of pesticide residues (revised)* [World Health Organization, 1997].

The NEDI for phosphine is equivalent to less than 42% of the PDE_{food} . It is therefore concluded that the chronic dietary exposure is small and the risk is acceptable.

Toxicological / Public Health Assessment

It has been determined that the use of phosphine as an insecticide for pome fruits, according to the GAP specified above, is very unlikely to pose any health risks from consumption of treated produce.

Other International MRLs

Compound	Food	Maximum Residue Limit (mg/kg)
Australia		
Phosphine	Pome fruits	T[temporary]0.01
European Commission		
Phosphine	Pome fruits	0.05
Japan		
Hydrogen Phosphide	Apples, Pears	0.01

Under Provision 6(3)(b) of the MRL Standards imported food may contain residues of agricultural compounds no greater than the MRLs specified for that food in the current editions or supplements of the FAO/WHO Codex Alimentarius Commission publications *Pesticide Residues in Food* or *Residues of Veterinary Drugs in Foods*.

To meet New Zealand's obligations under the Agreement on the Application of Sanitary and Phytosanitary Measures the proposed MRL will be notified to the World Trade Organization. Any country may choose to comment if they believe the proposed MRL represents a barrier to their trade.

2.5. PROPOSAL TO SET MRLS FOR NICARBAZIN

It is proposed that an MRL is set for nicarbazin when used as an anticoccidial agent for broiler chickens. It is proposed that Schedule One of the MRL Standards be amended by deleting the following entry:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Nicarbazin	330-95-0	1,3-N,N'-bis (4 nitrophenyl) urea as nicarbazin	Edible offal of poultry	0.5
			Poultry fat	0.5
			Poultry meat	0.5

As a replacement for the edited entry, is proposed that Schedule One of the MRL Standards be amended to include the following which will be the final entry:

Compound	CAS#	Residue definition	Food	Maximum Residue Limit (mg/kg)
Nicarbazin	330-95-0	1,3-N,N'-bis (4 nitrophenyl) urea as nicarbazin	Poultry edible offal	9
			Poultry muscle	4
			Poultry skin/fat	4

Amendment Rationale

The proposed MRLs represent an amendment to the current product use patterns to decrease the withholding period to nil days. To support the proposed withholding period it is required that the MRLs be increased to support the increased residues expected in animal tissue at slaughter. The adoption of these MRLs and use pattern is also intended to allow greater harmonisation with MRLs set overseas.

Chemical Information

Common name of compound	Nicarbazin (a complex of two compounds, 4,4'-dinitrocarbanilide (DNC) and 4,6-dimethyl-2-pyrimidinol (HDP). DNC is the active component
Use of compound	Coccidiostat

Chemical Abstract Services (CAS) Registry number	330-95-0
Type of compound	Nitrophenylurea with pyrimidin
Administration method	Feed

Good Agricultural Practice (GAP)

Nicarbazin is used as an anticoccidial agent for broiler chickens. It is to be applied as a feed with 40–50g of nicarbazin activity per tonne of complete feed and to be fed continuously to broiler chickens as the only ration for at least 14–28 days.

Residues Information

Residue data for broiler chickens supports MRLs of 9mg/kg (poultry offal), 4mg/kg (muscle), 4mg/kg (skin/fat) for nicarbazin in animals slaughtered immediately after the conclusion of treatment. MRLs of 9mg/kg (poultry offal), 4mg/kg (muscle), 4mg/kg (skin/fat) are therefore proposed to support GAP.

Dietary Risk Assessment

Acceptable Daily Intake	0.77mg/kg bw/day
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The potential daily exposure via food (PDE_{food}) is used for dietary intake calculation where a value has been set. An appropriate acceptable daily intake (ADI) is used in the absence of a PDE_{food} .

The chronic dietary exposure to nicarbazin is estimated by the National Estimated Dietary Intake (NEDI) calculation encompassing all registered uses of the chemical and food consumption data based upon the 1997 National Nutritional Survey for adults and the 1995 National Nutrition Survey of Australia, for children. The NEDI calculation is made in accordance with *Guidelines for predicting dietary intake of pesticide residues (revised)* [World Health Organization, 1997].

The NEDI for nicarbazin is equivalent to less than 1% of the ADI. It is therefore concluded that the chronic dietary exposure is small and the risk is acceptable.

Toxicological / Public Health Assessment

It has been determined that the use of nicarbazin as a anticoccidial agent for broiler chickens, according to the GAP specified above, is very unlikely to pose any health risks from consumption of treated produce.

Other International MRLs

Compound	Food	Maximum Residue Limit (mg/kg)
Australia		
Nicarbazin	Chicken kidney	20
	Chicken liver	35
	Chicken muscle	5
	Chicken skin/fat	10
Codex		
Nicarbazin	Chicken kidney	0.2
	Chicken liver	0.2
	Chicken muscle	0.2
	Chicken skin/fat	0.2
European Commission		
Nicarbazin	Chicken kidney	6
	Chicken liver	15
	Chicken muscle	4
	Chicken skin/fat	4

United State of America		
Nicarbazin	Chicken kidney	4
	Chicken liver	4
	Chicken muscle	4
	Chicken skin/fat	4
Japan		
	Chicken kidney	0.2
	Chicken liver	0.2
	Chicken muscle	0.2
	Chicken skin/fat	0.5

Under Provision 6(3)(b) of the MRL Standards imported food may contain residues of agricultural compounds no greater than the MRLs specified for that food in the current editions or supplements of the FAO/WHO Codex Alimentarius Commission publications *Pesticide Residues in Food* or *Residues of Veterinary Drugs in Foods*.

To meet New Zealand's obligations under the Agreement on the Application of Sanitary and Phytosanitary Measures the proposed MRL will be notified to the World Trade Organization. Any country may choose to comment if they believe the proposed MRL represents a barrier to their trade.

2.6 PROPOSAL TO EXEMPT DIDECYL DIMETHYL AMMONIUM CHLORIDE FROM AN MRL

It is proposed that a MRL exemption be set for didecyl dimethyl ammonium chloride (DDAC) when used as a fungicide on pipfruits.

It is proposed that Schedule Two of the MRL Standards be amended to include the following; and that this will be the resulting entry for DDAC in Schedule Two of the MRL Standards:

Compound	CAS#	Condition
Didecyl Dimethyl Ammonium Chloride	7173-51-5	When applied as a fungicide on pipfruits

Amendment Rationale

The proposed MRL exemption represents a new use pattern for DDAC. The complexity of the compound i.e. it is a mixture of alkyl-quaternary ammonium salts with typical alkyl chain lengths of C8, C10 and C12, means it is not suitable to be managed against a concentration limit. Therefore it can be exempted from the requirement of an MRL.

Chemical Information

Common name of compound	Didecyl Dimethyl Ammonium Chloride
Use of compound	Sanitiser
Chemical Abstract Services (CAS) Registry number	7173-51-5
Type of compound	Quaternary ammonium
Administration method	Spray

Good Agricultural Practice (GAP)

DDAC is proposed for use as a fungicide treatment for pipfruits. Management of GAP through the establishment of MRLs has been deemed unsuitable given that there are too many other variables to allow a good judgment to be made as to whether an MRL breach would represent misuse, including its presence in exempt agricultural chemicals and in surface sanitizers.

Dietary Risk Assessment

No acceptable daily intake has been set for DDAC. However, it is used safely in many cleaning products for residential premise, public access premise and medical premise. Trace amounts of DDAC may be consumed with no incident through accidental contamination of food and water with surface cleaners. No dietary risk is expected through the use of DDAC on pipfruits.

Toxicological / Public Health Assessment

Apart from its corrosive property, DDAC does not trigger any of the chronic toxicity endpoints. Therefore, the exemption of DDAC from an MRL to the conditions specified above is very unlikely to pose any health risks from consumption of the harvested commodity.

2.7. PROPOSAL TO EXEMPT ETHYLENE FROM AN MRL

It is proposed that an MRL exemption be set for ethylene when used in the ripening process of fruits.

It is proposed that Schedule Two of the MRL Standards be amended to include the following; and that this will be the resulting entry for ethylene in Schedule Two of the MRL Standards:

Compound	CAS#	Condition
Ethylene	74-85-1	When used for ripening and de-greening of fruits

Amendment Rationale

The proposed MRL exemption represents a new use pattern for ethylene. Based on its natural production rate being high in plants, including in leaves, stems, roots, flowers, fruits, tubers, and seedlings, any ethylene used as an agricultural compound would be undistinguishable from naturally occurring levels. As such it is not suitable to be managed against a concentration limit and can be exempted from the requirement of an MRL.

Chemical Information

Common name of compound	Ethylene
Use of compound	Ripening of fruits
Chemical Abstract Services (CAS) Registry number	74-85-1
Type of compound	Unsaturated hydrocarbon
Administration method	Gas

Good Agricultural Practice

Ethylene is proposed for use in accelerating the ripening and de-greening process of fruit at a dose rate of up to 10ppm for a maximum of 120 hours via a trickle gas system.

Dietary Risk Assessment

Ethylene is produced naturally by ripening plants and released as a volatile gas. Levels of ethylene remaining in the plant are likely to be regulated by biological mechanisms to natural levels. As such there is no dietary risk associated with this exemption above that from untreated fruits.

Toxicological / Public Health Assessment

The exemption of ethylene from an MRL to the conditions specified above is very unlikely to pose any health risks from consumption of the harvested commodity.

2.8. PROPOSAL TO EXTEND THE EXEMPTION OF PHOSPHOROUS ACID FROM AN MRL

It is proposed that the current MRL exemption of phosphorous acid when used as an agricultural compound be extended so that it covers residues arising from the use of fosetyl aluminium as an agricultural compound.

It is proposed that Schedule Two of the MRL Standards be amended to include the following; and that this will be the resulting entry for phosphorous acid in Schedule Two of the MRL Standards:

Compound	CAS#	Condition
Phosphorous acid	10294-56-1 or 13598-36-2	When directly used as an agricultural compound, and a representative of the use of fosetyl aluminium as an agricultural compound.

Amendment Rationale

The proposed extension to the current MRL exemption of phosphorous acid is based on the fact that fosetyl-aluminum rapidly degrades in plants to phosphorous acid. Phosphorous acid in plants does not only result from the use of fosetyl-aluminium. It can be from other pesticides, foliar fertilizers, and other organic products used for foliar fertilisation.

Chemical Information

Common name of compound	Fosetyl Aluminium
Use of compound	Fungicide
Chemical Abstract Services (CAS) Registry number	39148-24-8
Type of compound	Organophosphorus fungicide
Administration method	Spray

Good Agricultural Practice

Fosetyl-aluminium is currently approved as a fungicide for the control of *phytophthora* in pome fruit, ornamentals, kiwifruit, avocados, and citrus fruit at a rate of 2–4gai/L.

Dietary Risk Assessment

Fosetyl-aluminium and phosphoric acid have low toxicity profiles with acceptable daily intake values of 3mg/kg bw/d and 3.9mg/kg bw/d for fosetyl-aluminum and phosphorous acid respectively. As levels of phosphorus acid resulting from use of fosetyl-aluminium are unlikely to result from use of phosphorus acid directly there is no increased dietary risk from extending the MRL exemption.

Toxicological / Public Health Assessment

The extension of the exemption for phosphorus acid to cover the use of fosetyl-aluminium is very unlikely to pose any health risks from consumption of the harvested commodity.

2.9. PROPOSAL TO EXEMPT LECIRELIN FROM AN MRL

It is proposed that lecrelin be exempted from an MRL when used as a treatment for reproductive conditions in cattles, horses, and rabbits.

It is proposed that Schedule Three of the MRL Standards be amended to include the following; and that this will be the resulting entry for lecrelin in Schedule Three of the MRL Standards:

Compound	CAS#	Condition
Lecirelin	61012-19-9	When uses as a treatment of fertility disorders of ovarian origin and/or anoestrus, for the purpose of inducing ovulation and increasing conception rates in cattle, horses, and rabbits.

Amendment Rationale

The proposed MRL exemption represents the registration of a novel active ingredient in New Zealand, with the proposed use as a treatment for reproductive conditions in cattles, horses, and rabbits. The proposed use of the compound means that it will be used as a treatment for individual animals that are unlikely to go for slaughter immediately after treatment. Lecirelin is rapidly eliminated from animal tissues. As such it is deemed appropriate to exempt lecirelin from the requirement to comply with an MRL.

Chemical Information

Common name of compound	Lecirelin
Use of compound	Veterinary Treatment
Chemical Abstract Services (CAS) Registry number	61012-19-9
Type of compound	Nonapeptide
Administration method	Injection

Good Agricultural Practice

Lecirelin is proposed to treat reproductive conditions in cattles, horses and rabbits at a dose rate of up to 100ug for cows and mares and 8ug for dose via intramuscular injection.

Residues Information

Pharmacokinetics of lecirelin indicates that it rapidly eliminated from the animal tissues within 24 hours. Residues are not expected to be detected after this time. Due to the nature of the treatment, animals would not be sent for slaughter immediately after application.

Dietary Risk Assessment

Due to the lack of expected residues in consumed animal tissue and the fact that the compound is a peptide, it will be rapidly denatured in the stomach. Therefore there is no dietary risk associated with this exemption.

Toxicological / Public Health Assessment

Because recently treated animals are very unlikely to enter the food chain, and there is no dietary risk associated with this use, it can be concluded that there is no public health risk associated with this MRL exemption.