



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



TRADE ADVICE NOTICE

on Thiamethoxam and Lambda-Cyhalothrin in the Product Cruiser Force
Insecticide Seed Treatment

APVMA Product Number P65888

JULY 2012

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Comments and enquiries:

The Manager, Public Affairs
Australian Pesticides and Veterinary Medicines Authority
PO Box 6182
KINGSTON ACT 2604 Australia
Telephone: +61 2 6210 4701
Email: communications@apvma.gov.au

This publication is available from the APVMA website: www.apvma.gov.au.

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PREFACE

The Australian Pesticides and Veterinary Medicines Authority (APVMA) is the Australian Government regulator with responsibility for assessing and approving agricultural and veterinary chemical products prior to their sale and use in Australia.

The APVMA has a policy of encouraging openness and transparency in its activities and of seeking stakeholder involvement in decision making. Part of that process is the publication of Trade Advice Notices for proposed extensions of use for existing chemicals where there may be trade implications, as defined in *Ag MORAG: Manual of Requirements and Guidelines* Part 5B.

About this document

This is a Trade Advice Notice.

It indicates that the Australian Pesticides and Veterinary Medicines Authority (APVMA) is considering an application to vary the use of an existing registered agricultural or veterinary chemical. It provides a summary of the APVMA's residue and trade assessment.

Comment is sought from industry groups and stakeholders on the information contained within this document.

Making a submission

The APVMA invites any person to submit a relevant written submission as to whether the application for the registration of **Cruiser Force Insecticide Seed Treatment** containing the existing active constituents thiamethoxam and lambda-cyhalothrin be granted. Submissions should relate only to matters that the APVMA is required by legislation to take into account in deciding whether to grant the application. In relation to this document, these grounds relate to the **trade implications** of the extended use of the product. Comments received outside these grounds cannot be considered by the APVMA.

Submissions must be received by the APVMA by close of business on **28 August 2012** and be directed to the contact listed below. All submissions to the APVMA will be acknowledged in writing via email or by post.

Relevant comments will be taken into account by the APVMA in deciding whether to grant the application and in determining appropriate conditions of registration and product labelling.

When making a submission please include:

- Contact name
- Company or Group name (if relevant)
- Postal Address
- Email Address (if available)
- The date you made the submission.

All personal and **confidential commercial information (CCI)**¹ material contained in submissions will be treated confidentially.

Written submissions on the APVMA's proposal to grant the application for registration that relate to the **grounds for registration** should be addressed in writing to:

Contact Officer, Pesticides
Pesticides Program
Australian Pesticides and Veterinary Medicines Authority
PO Box 6182
Kingston ACT 2604

Phone: 02 6210 4748

Fax: 02 6210 4776

Email: pesticides@apvma.gov.au

Further information

Further information can be obtained via the contact details provided above.

Further information on trade advice notices can be found on the APVMA website: www.apvma.gov.au

¹ A full definition of "confidential commercial information" is contained in the Agvet Code.

1 INTRODUCTION

The Australian Pesticides and Veterinary Medicines Authority (APVMA) has before it an application from Syngenta Crop Protection Pty Limited for registration of the product, *Cruiser Force Insecticide Seed Treatment*, containing 210 g/L thiamethoxam and 37.5 g/L lambda-cyhalothrin, for use on canola and cereals. The proposed use requires establishment of grain and fodder MRLs for cyhalothrin and grain, fodder and forage MRLs for thiamethoxam.

The potential for thiamethoxam and lambda-cyhalothrin residues to unduly prejudice trade as a result of the proposed use in cereal grain, canola seed, oaten hay and meat and dairy products is discussed below.

2 TRADE CONSIDERATIONS

2.1 Commodities exported

Cereal grains and canola are considered to be major export commodities, as are commodities of animal origin, such as meat, offal and dairy products, which may be derived from livestock fed feed produced from treated seed. Residues in these commodities resulting from the use of *Cruiser Force Insecticide Seed Treatment* may have the potential to unduly prejudice trade.

2.2 Destination and value of exports

Cereal grains

Australian exports of wheat totalled 18639 kt and were valued at ~ \$5526m in 2010-11².

Australian exports of rice totalled 64.9 kt and were valued at ~\$199m in 2010-11². Australian rice production has been significantly lower than the long term average over the last decade owing to prolonged drought.

Australian exports of coarse grains totalled 5337 kt and were valued at ~\$1493m in 2010-11². Barley was the most significant export (~\$1295m) followed by sorghum (~\$146m) and oats (~\$37m).

Major export markets for the major Australian cereals by value are shown below (Australian Commodity Statistics 2011 and other sources).

Table 1: Major destinations for Australian cereal grain exports (selected grains)

GRAIN	MAJOR DESTINATIONS
Barley	China, Japan, Middle East, Rep. of Korea
Sorghum	Japan
Oats	Statistics not available
Rice	Historically includes the Middle East, Hong Kong, Japan
Wheat	Asia including Indonesia, Japan, Rep. of Korea, Bangladesh, Malaysia, Thailand, China; Middle East including Iraq, Yemen; Egypt

² http://adl.brs.gov.au/data/warehouse/agcstd9abcc002/agcstd9abcc0022011/ACS_2011_1.0.3.pdf

Approximately 720 kilotonne of hay is exported from Australia, to the value of ~\$230-250 million, per annum.³ Approximately 85% of exports are oaten hay, while 10% is straw and the balance is predominantly lucerne hay and chaff. Approximately 85% of Australian export hay is destined for Japan, while the volume of hay exported to China and the UAE is increasing.

Canola

Australian exports of canola seed, oil and meal totalled 1453 kt (value \$802 million), 104kt (\$160 million) and 31.50 kt (\$10.97 million) respectively in 2010-11².

The major export markets for canola seeds in 2008 included Netherlands, Pakistan, Japan, Germany and United Arab Emirates and for canola oil the Republic of Korea and New Zealand.⁴

Animal Commodities

The significant export markets for Australian beef, sheep and pig meat and offals are listed in Appendix 3 of Part 5B of Ag MORAG. Australia exports significant quantities of dairy products (~\$2275m in 2010-11)², with the main markets being Japan and other countries in Asia. Less significant are exports of poultry meat and eggs. Exports of poultry meat were valued at ~\$38m in 2010-11² with the major markets being South Africa, the Philippines, Hong Kong, Singapore and the South Pacific Islands⁵. Exports of eggs were valued at ~\$4m in 2005-06 with the major markets being Singapore, the USA and the Philippines⁶.

2.3 Proposed Australian use-pattern

The proposed Australian use pattern for *Cruiser Force Insecticide Seed Treatment* is summarised below.

³ Personal communication, AFIA, August 2010

⁴ <http://faostat.fao.org/site/537/default.aspx>

⁵ http://www.daff.gov.au/agriculture-food/meat-wool-dairy/ilg/industries/chicken_meat 1 June 2012

⁶ http://www.daff.gov.au/agriculture-food/meat-wool-dairy/ilg/industries/australian_egg_industry 1 June 2012

Table 2: Proposed use pattern

Cruiser Force Insecticide Seed Treatment (210g/L thiamethoxam and 37.5g/L lambda-cyhalothrin)

Crop	Pests	Rate (mL / 100 kg seed)	Critical Comments
Canola	Control of: Aphids: Green Peach (<i>Myzus persicae</i>) Grey Cabbage (<i>Brevicoryne brassicae</i>)	500 – 1000 ≡ (105g thiamethoxam + 18.8g lambda- cyhalothrin / 100 kg seed) - (210g thiamethoxam + 37.5g lambda- cyhalothrin / 100 kg seed)	CRUISER FORCE will protect cereal seedlings from early season aphid feeding damage. Use the higher rate in areas where higher pest pressure is expected or a longer period of control is required.
	Suppression of: Red Legged Earth Mites (<i>Halotydeus destructor</i>) Lucerne Flea (<i>Sminthurus viridis</i>)	1000 (≡ 210g thiamethoxam + 37.5g lambda- cyhalothrin / 100 kg seed)	CRUISER FORCE will protect emerging seedlings and reduce feeding damage for 4 to 5 weeks after sowing. Crops must be monitored in the first 4 weeks of emergence and an insecticide spray applied if numbers exceed industry thresholds. If high numbers of Red Legged Earth Mites are expected then apply a bare earth spray prior to sowing. Use CRUISER FORCE seed treatment as part of an integrated mite management program that might include: For autumn sowing: After a pasture phase sow CRUISER FORCE treated seed following a well-timed spring insecticide spray (prior to the development of diapause eggs). After a cropping phase a spring spray is not usually required, however if monitoring in spring finds moderate mite populations, a spring spray should be applied.
Cereals	Control of: Feeding damage caused by Oat/Wheat Aphid (<i>Rhopalosiphu m padi</i>), Corn Aphid (<i>Rhopalosiphu m maidis</i>)	165 – 330 ≡ (34.7g thiamethoxam + 6.2g lambda- cyhalothrin / 100 kg seed) - (69.3g thiamethoxam + 12.4g lambda- cyhalothrin / 100 kg seed)	CRUISER FORCE will protect cereal seedlings from early season aphid feeding damage. Use the higher rate in areas where higher pest pressure is expected or a longer period of control is required.
	Suppression of: Red Legged Earth Mites (<i>Halotydeus destructor</i>) Lucerne Flea (<i>Sminthurus viridis</i>)	330 (≡ 69.3g thiamethoxam + 12.4g lambda- cyhalothrin / 100 kg seed)	CRUISER FORCE will protect emerging seedlings and reduce feeding damage for 4 to 5 weeks after sowing. Crops must be monitored in the first 4 weeks of emergence and an insecticide spray applied if numbers exceed industry thresholds. If high numbers of Red Legged Earth Mites are expected then apply a bare earth spray prior to sowing. Use CRUISER FORCE seed treatment as part of an integrated mite management program that might include: For autumn sowing: After a pasture phase sow CRUISER FORCE treated seed following a well-timed spring insecticide spray (prior to the development of diapause eggs). After a cropping phase a spring spray is not usually required, however if monitoring in spring finds moderate mite populations, a spring spray should be applied.

Withholding period:

Canola:

Harvest: Not required when used as directed.

Grazing: DO NOT graze or cut for stock food for 6 weeks after planting.

Cereals:

Harvest: Not required when used as directed.

Grazing: DO NOT graze or cut for stock food for 8 weeks after planting.

2.4 Results from residues trials presented to the APVMA

Cereal grains

Sixteen GLP-compliant field trials were conducted across Australia during 2009/2010 in various varieties of wheat, barley and oats to determine the levels of thiamethoxam and lambda-cyhalothrin in cereal forage, grain and straw following a single seed application of a liquid encapsulated formulation containing 37.5 g/L lambda-cyhalothrin and 210g/L thiamethoxam. Eight trials were conducted in wheat and four each in barley and oats. The product was applied at both 330 mL/100kg seed and 660mL/100 kg seed (1 and 2x the proposed application rate respectively) in all trials.

Lambda-cyhalothrin

No residues of lambda-cyhalothrin above the LOQ (0.01 mg/kg) were observed in any wheat, barley or oat forage, seed or straw sample at either 1x or 2x the proposed application rate. There is an established cereal forage MRL (1 mg/kg). An MRL for cereal grain except barley, wheat and sorghum at *0.01 mg/kg, to replace the current temporary MRL (T*0.05 mg/kg), is appropriate. An MRL for straw and fodder (dry) of cereal grains of *0.01 mg/kg is also appropriate for this use.

Thiamethoxam

No residues of thiamethoxam above the LOQ (0.01 mg/kg) were observed at harvest in any seed or stubble sample at crop maturity (121 – 182 days) at either 1x or 2x the proposed application rate. It is considered appropriate to establish a permanent MRL for the use of thiamethoxam on cereal grains (except maize and sorghum) at *0.01 mg/kg, to replace the current temporary MRL (T*0.02 mg/kg). An MRL for straw and fodder (dry) of cereal grains [except Maize fodder; Sorghum straw and fodder, dry] of *0.01 mg/kg to replace the current temporary MRL (T*0.05 mg/kg) is appropriate. The proposed grazing WHP is 8 weeks after planting. Dry weight residues observed in wheat, barley and oat forage at approximately 56 days after application, at 1x the proposed rate are in rank order:

0.05, 0.05, 0.05, 0.11, 0.13, 0.17, 0.18, 0.21 and 0.55 mg/kg (STMR = 0.13 mg/kg).

An MRL for thiamethoxam in cereal forage set at 1 mg/kg is recommended, to replace the current temporary MRL for Forage of cereal grains [except maize forage; sorghum forage (green)] (0.1 mg/kg) as well as the established MRLs for maize forage and the sorghum forage (green) (both currently 0.5 mg/kg).

Canola

Eight GLP-compliant field trials were conducted across Australia during 2009 in two varieties of canola to determine the levels of thiamethoxam and lambda-cyhalothrin in canola forage, seed and stubble following a single seed application of a liquid encapsulated formulation containing 37.5 g/L lambda-cyhalothrin and 210g/L thiamethoxam. Application rates were 1.0 L/100kg seed and 2.0 L/100 kg seed (1 and 2x the proposed application rate respectively) in all trials.

Lambda-cyhalothrin

No residues of lambda-cyhalothrin above the LOQ (0.01 mg/kg) were observed in any canola forage, seed or stubble sample at either 1x or 2x the proposed application rate. Cyhalothrin MRLs are established for rape seed (0.02 mg/kg) and rape/canola forage (2 mg/kg). An MRL for rape seed straw and fodder of *0.01 mg/kg is appropriate for this use.

Thiamethoxam

No residues of thiamethoxam above the LOQ (0.01 mg/kg) were observed at harvest in any seed or stubble sample at crop maturity (165 – 195 days) at either 1x or 2x the proposed application rate. A permanent thiamethoxam MRL for rape seed (canola) of *0.01 mg/kg, replacing the current temporary MRL (T*0.02 mg/kg) is appropriate. An MRL for rape seed straw and fodder of *0.01 mg/kg is appropriate to replace the current temporary MRL (T*0.01 mg/kg).

The proposed grazing WHP is 6 weeks after planting. In six trials in which residues were determined in forage at 41- 43 days, dry weight residues from the trials carried out at 1x the proposed rate, were in rank order;

0.05, 0.07, 0.13, 0.15, 0.43 and 0.53 mg/kg (STMR = 0.14 mg/kg).

An MRL for thiamethoxam in rape seed forage (dry) of 1 mg/kg is considered appropriate, which will replace the current temporary MRL (T 0.5 mg/kg).

Animal Commodities

Lambda-cyhalothrin

No residues of lambda-cyhalothrin above the LOQ (0.01 mg/kg) were observed in any cereal forage, seed or straw or canola forage, seed or stubble sample. Animal transfer data for lambda-cyhalothrin do not need to

be considered as the animal dietary burden is not higher than previously considered. No changes to the animal commodity MRLs are necessary.

Thiamethoxam

Based on the proposed uses of *Cruiser Force Insecticide Seed Treatment* the maximum livestock (beef or dairy cattle) burden is from the consumption of cereal forage at 100% of the diet. The predicted residues in animal commodities derived from livestock fed on treated forage (HR of 0.55 mg/kg thiamethoxam at 56-day WHP, STMR = 0.13 mg/kg at 56-day WHP) are summarised below.

Table 3: Calculated residues of thiamethoxam in key animal commodities

MATRIX	ESTIMATED RESIDUE THIAMETHOXAM (BASED ON HR; mg/kg)	MRL
Liver	<0.02	*0.02
Milk	<0.005	*0.005
Meat	<0.02	*0.02
Kidney	<0.02	*0.02
Fat	<0.02	Not established

Note; Residue is the sum of thiamethoxam and CGA 322704 residues expressed as thiamethoxam

No changes are recommended to the current mammalian commodity MRLs for edible offal, mammalian meat and milk.

New MRLs set at LOQ for thiamethoxam on cereal grains [except maize and sorghum] at *0.01 mg/kg and for thiamethoxam on rape seed [canola] will not increase the livestock burden for poultry above levels previously considered and therefore the proposed use should not result in the current poultry commodity MRLs for meat, edible offal and eggs being exceeded. No changes to poultry commodity MRLs for thiamethoxam are required at this time.

2.5 Codex alimentarius commission and overseas MRLs

The Codex Alimentarius Commission (Codex) is responsible for establishing Codex Maximum Residue Limits (CXLs) for pesticides. Codex CXLs are primarily intended to facilitate international trade, and accommodate differences in Good Agricultural Practice (GAP) employed by various countries. Some countries may accept Codex CXLs when importing foods. Thiamethoxam and lambda-cyhalothrin have been considered by Codex. MRLs have been established in most major export markets and are summarised below.

Table 4: Tolerances for thiamethoxam residues

Commodity ^a	Tolerance for residues arising from the use of thiamethoxam (mg/kg)						
	Australia	Codex	EU	USA	Japan	Taiwan	Russia
Plant Commodities							
Residue Definition	Thiamethoxam	Thiamethoxam	Sum of thiamethoxam and clothianidin expressed as thiamethoxam	Sum of Thiamethoxam and N-(2-chloro-thiazol-5-ylmethyl)-N'-methyl-N'-nitro-guanidine, expressed as thiamethoxam	Thiamethoxam	Not specified	Not specified
Barley		0.4	*0.05 (0.4 indicative)	0.4	0.3		0.05
Oats			*0.05				
Wheat		0.05	*0.05		0.02		0.05
Maize	*0.02	0.05	*0.05				
Sorghum grain, grain	*0.02		*0.05			0.1	
Sorghum grain, stover				0.02			
Canola	T*0.02 (*0.01)		*0.05	0.02	0.02		0.05 (Rape seeds, oil)
Barley straw and fodder, dry		2					
Wheat straw and fodder, dry		2					
Maize fodder, dry	0.5	0.05					
Cereal straw and fodder, dry				Barley hay 0.4 Barley straw 0.4 Wheat and Oats hay 0.02 Wheat, Rye and Oats straw 0.02			
Rape seed straw and fodder	T*0.01						
Sorghum straw and fodder, dry	0.1						

Commodity ^a	Tolerance for residues arising from the use of thiamethoxam (mg/kg)						
	Australia	Codex	EU	USA	Japan	Taiwan	Russia
Straw and fodder (dry) of cereal grains [except Maize fodder; Sorghum straw and fodder, dry]	T*0.05 mg/kg						
Cereal forage (green)	Forage of cereal grains [except maize forage; sorghum forage (green)] T0.1 mg/kg			Wheat, Rye and Oats forage 0.5 Sorghum forage 0.02			
Maize forage	0.5						
Sorghum forage (green)	0.5						
Rape seed forage (dry)	T0.5 mg/kg						
Other cereal grains	Cereal Grains [except maize and sorghum] T*0.02 (*0.01)			Grain, cereal, Group 15, except barley 0.02	0.02		0.05 Cereal grain
Animal Commodities							
Residue Definition	Sum of Thiamethoxam and N-(2-chloro-thiazol-5-ylmethyl)-N'-methyl-N'-nitro-guanidine, expressed as thiamethoxam	Thiamethoxam	Sum of thiamethoxam and clothianidin expressed as thiamethoxam	Sum of Thiamethoxam and N-(2-chloro-thiazol-5-ylmethyl)-N'-methyl-N'-nitro-guanidine, expressed as thiamethoxam	Thiamethoxam	Not specified	Not specified
Edible offal (mammalian)	*0.02	*0.01	*0.01				
Cattle kidney			*0.01		0.01		
Sheep kidney			*0.01				
Cattle liver			*0.01		0.01		
Sheep liver			*0.01				
Cattle meat by-products				0.04			
Sheep meat by-products				0.04			

Commodity ^a	Tolerance for residues arising from the use of thiamethoxam (mg/kg)						
	Australia	Codex	EU	USA	Japan	Taiwan	Russia
Edible offal, sheep			*0.01				
Cattle, edible offal					0.01		
Other poultry liver			*0.01 (Poultry liver)				
Other poultry kidney			*0.01 (Poultry kidney)				
Chicken edible offal							
Other poultry edible offal	*0.02 (Poultry, edible offal of)	*0.01 (Poultry, edible offal of)	*0.01 (Poultry, edible offal of)				
Meat (mammalian)	*0.02	Meat (from mammals other than marine mammals) 0.02			Other terrestrial mammals, muscle (and fat, liver, kidney and edible offal) 0.01		
Cattle fat			*0.01		0.01		
Sheep fat			*0.01				
Other poultry fat			*0.01 (Poultry fat)				
Cattle, muscle					0.01		
Cattle, meat			*0.01 (0.02 indicative)	0.02			
Sheep meat			*0.01 (0.02 indicative)	0.02			
Other poultry muscle	*0.02 (Poultry meat)	*0.01 (Poultry meat)	*0.01 (Poultry meat)				
Milks	*0.005	0.05	0.02 (0.05 indicative)	0.02	0.01		
Eggs	*0.02	*0.01	*0.01				

^a Commodity covered by tolerance. For instance, tolerance may be for bovine liver which covers cattle liver.

Note: Australian MRLs which are bold and italicised are those which are proposed as a result of this evaluation.

Note: Russian MRLs were sourced from the following websites: http://ec.europa.eu/food/international/trade/ru_requirements_MRLs_pesticides_en.htm or www.mrldatabase.com/results.cfm

Note: Relevant MRLs are not known to be established in China.

Note: Indicative European Union MRLs accepted at February 2012 Standing Committee meeting. Publication of amending Regulation is likely in June/ July 2012 www.pesticides.gov.uk/guidance/industries/pesticides/News/Other-News/Potential-changes-to-MRLs-under-EC-Regulation-396-2005

Table 5: Tolerances for lambda-cyhalothrin residues

Commodity ^a	Tolerance for residues arising from the use of lambda-cyhalothrin (mg/kg)						
	Australia	Codex	EU	USA	Japan	Taiwan	Russia
Plant Commodities							
Residue Definition	Cyhalothrin, sum of isomers	Cyhalothrin, sum of all isomers	Lambda-cyhalothrin, including other mixed isomeric constituents (sum of isomers)	Lambda-cyhalothrin and an isomer gamma-cyhalothrin	Cyhalothrin includes residues of lambda-cyhalothrin	Not specified	Not specified
Barley	0.2	0.5	0.05 (0.5 indicative)	0.05	0.2		
Oats		0.05	*0.02 (0.05 indicative)	0.05			
Wheat	*0.05	0.05	*0.02 (0.05 indicative)	0.05	0.05		0.01
Maize	*0.02	0.02	*0.02				
Sorghum grain, grain	0.5		*0.02	0.2			
Sorghum grain, stover				0.5			
Rice		1	*0.02 (1 indicative)	1		0.5	
Rye		0.05	*0.02 (0.05 indicative)	0.05	0.02		
Triticale		0.05					
Wheat bran, unprocessed		0.1		Wheat, barley and rye bran 0.2			
Maize		0.02					
Canola	0.02		*0.05 (0.2 indicative)	1.0			0.1 (Rape seeds, oil)
Cereal straw and fodder, dry		2		Wheat, Oats, Barley and Rye hay 2.0 Wheat, Oats, Barley and Rye straw 2.0			
Cereal forage (green)	1			Wheat, Oats and Rye forage 2.0			
Rape/ canola forage (dry)	2						

Commodity ^a	Tolerance for residues arising from the use of lambda-cyhalothrin (mg/kg)						
	Australia	Codex	EU	USA	Japan	Taiwan	Russia
Other cereal grains	Cereal Grains [except barley, wheat and sorghum] T*0.05 (*0.01)				0.2		0.01 Cereal grain
Animal Commodities							
Residue Definition	Cyhalothrin, sum of isomers	Cyhalothrin, sum of all isomers	Lambda-cyhalothrin, including other mixed isomeric constituents (sum of isomers)	Lambda-cyhalothrin and an isomer gamma-cyhalothrin	Cyhalothrin includes residues of lambda-cyhalothrin	Not specified	Not specified
Edible offal (mammalian)	*0.02		0.5				
Cattle kidney		0.2	0.5		0.02		
Sheep kidney		0.2	0.5				
Pigs kidney		0.2					
Goats kidney		0.2					
Cattle liver		0.05	0.5		0.02		
Sheep liver		0.05	0.5				
Pigs liver		0.05					
Goats liver		0.05					
Cattle meat by-products				0.2			
Sheep meat by-products				0.2			
Poultry meat by-products				0.01			
Chicken liver			0.5		0.02		
Cattle, edible offal					0.2		
Other poultry liver			*0.02 (Poultry liver)		0.02		
Chicken kidney			0.5		0.02		
Other poultry kidney			*0.02 (Poultry kidney)		0.02		
Chicken edible offal					0.02		
Other poultry edible offal	*0.02 (Poultry, edible offal of)				0.02		

Commodity ^a	Tolerance for residues arising from the use of lambda-cyhalothrin (mg/kg)						
	Australia	Codex	EU	USA	Japan	Taiwan	Russia
Meat (mammalian)		Meat (from mammals other than marine mammals) 3			Other terrestrial mammals, muscle 0.02 (and fat 0.4, liver 0.05, kidney 0.02 and edible offal 0.2)		
Cattle fat	Meat [mammalian][in the fat] 0.5 mg/kg		0.5	3	0.4		
Sheep fat			0.5	3			
Chicken fat					0.3		
Other poultry fat			*0.02 (Poultry fat)	0.03	0.3		
Cattle, muscle					0.02		
Cattle, meat			0.5	0.2			
Sheep meat			0.5	0.2			
Chicken muscle					0.02		
Other poultry muscle	*0.02 (Poultry meat)		*0.02 (Poultry meat)	0.01 (Poultry meat)	0.02		
Milks	Milks[in the fat] 0.5 mg/kg	0.2	0.05	Milk, fat (reflecting 0.4 ppm on whole milk) 10	0.03		
Eggs	*0.02		*0.02	0.01	0.02		

^a Commodity covered by tolerance. For instance, tolerance may be for bovine liver which covers cattle liver.

Note: Australian MRLs which are bold and italicised are those which are proposed as a result of this evaluation.

Note: Russian MRLs were sourced from the following websites: http://ec.europa.eu/food/international/trade/ru_requirements_MRLs_pesticides_en.htm or www.mrlatabase.com/results.cfm

Note: Relevant MRLs are not known to be established in China.

Note: Indicative European Union MRLs accepted at February 2012 Standing Committee meeting. Publication of amending Regulation is likely in June/ July 2012 www.pesticides.gov.uk/guidance/industries/pesticides/News/Other-News/Potential-changes-to-MRLs-under-EC-Regulation-396-2005

2.6 Current and proposed Australian MRLs for thiamethoxam and lambda-cyhalothrin

Current relevant MRLs and the residue definitions for thiamethoxam and lambda-cyhalothrin are presented below. A full listing of MRLs can be found at www.apvma.gov.au/residues/standard.php.

Table 6: Current relevant entries in the MRL Standard - Table 1, Table 3 and Table 4

MRL STANDARD: TABLE 1

COMPOUND	FOOD	MRL (mg/kg)
THIAMETHOXAM		
GC 0080	Cereal grains [except maize and sorghum]	T*0.02
SO 0691	Cotton seed	*0.02
MO 0105	Edible offal (Mammalian)	*0.02
PE 0112	Eggs	*0.02
GC 0645	Maize	*0.02
MM 0095	Meat (mammalian)	*0.02
ML 0106	Milks	*0.005
PO 0111	Poultry, Edible offal of	*0.02
PM 0110	Poultry meat	*0.02
SO 0495	Rape seed [canola]	T*0.02
GC 0651	Sorghum	*0.02
GS 0659	Sugar cane	T*0.02
SO 0702	Sunflower seed	*0.02

*MRL set at the limit of quantitation

MRL STANDARD: TABLE 3

COMPOUND	RESIDUE
THIAMETHOXAM	Commodities of plant origin: Thiamethoxam Commodities of animal origin: Sum of thiamethoxam and N-(2-chloro-thiazol-5-ylmethyl)-N'-methyl-N'-nitro-guanidine, expressed as thiamethoxam

MRL STANDARD: TABLE 4

COMPOUND	ANIMAL FEED COMMODITY	MRL (mg/kg)
THIAMETHOXAM		
AF 0080	Forage of cereal grains [except maize forage; sorghum forage (green)]	T0.1
AS 0645	Maize fodder	0.5
AF 0645	Maize forage	0.5
	Rape seed forage (dry)	T0.5
	Rape seed straw and fodder	T*0.01
AF 0651	Sorghum forage [green]	0.5
AS 0651	Sorghum straw and fodder, dry	0.1
AS 0081	Straw and fodder(dry) of cereal grains [except Maize fodder; Sorghum straw and fodder, dry]	T*0.05

*MRL set at the limit of quantitation

MRL STANDARD: TABLE 1

COMPOUND	FOOD	MRL (mg/kg)
CYHALOTHRIN		
GC 0640	Barley	0.2
GC 0080	Cereal grains [except barley, wheat and sorghum]	T*0.05
SO 0691	Cotton seed	*0.02
MO 0105	Edible offal (Mammalian)	*0.02
PE 0112	Eggs	*0.02
MM 0095	Meat [mammalian][in the fat]	0.5
ML 0106	Milks [in the fat]	0.5
PO 0111	Poultry, Edible offal of	*0.02
PM 0110	Poultry meat	*0.02
SO 0495	Rape seed	0.02
GC 0651	Sorghum	0.5
SO 0702	Sunflower seed	*0.01
GC 0654	Wheat	*0.05

*MRL set at the limit of quantitation

MRL STANDARD: TABLE 3

COMPOUND	RESIDUE
LAMBDA-CYHALOTHRIN	See Cyhalothrin
CYHALOTHRIN	Cyhalothrin, sum of isomers

MRL STANDARD: TABLE 4

COMPOUND	ANIMAL FEED COMMODITY	MRL (mg/kg)
CYHALOTHRIN		
	Cereal forage (green)	1
	Cotton seed by-products	1
	Forage brassicas (green)	1
AL 0157	Legume animal feeds [green]	1
	Legume fodder/straw	2
	Rape/canola forage (dry)	2

The following changes are proposed to Australian thiamethoxam and lambda-cyhalothrin MRLs:

Table 7: Proposed changes to the MRL Standard - Table1 and Table 4

MRL STANDARD: TABLE 1

COMPOUND	FOOD	MRL (mg/kg)
THIAMETHOXAM		
DELETE:		
GC 0080	Cereal grains [except maize and sorghum]	T*0.02
SO 0495	Rape seed [canola]	T*0.02
ADD:		
GC 0080	Cereal grains [except maize and sorghum]	*0.01
SO 0495	Rape seed [canola]	*0.01

*MRL set at the limit of quantitation

MRL Standard: Table 4

COMPOUND	FOOD	MRL (mg/kg)
THIAMETHOXAM		
DELETE:		
AF 0080	Forage of cereal grains [except maize forage; sorghum forage (green)]	T0.1
AF 0645	Maize forage	0.5
	Rape seed forage (dry)	T0.5
	Rape seed straw and fodder	T*0.01
AF 0651	Sorghum forage [green]	0.5
AS 0081	Straw and fodder (dry) of cereal grains [except Maize fodder; Sorghum straw and fodder, dry]	T*0.05
ADD:		
AF 0080	Forage of cereal grains	1
	Rape seed forage (dry)	1
	Rape seed straw and fodder	*0.01
AS 0081	Straw and fodder (dry) of cereal grains [except Maize fodder; Sorghum straw and fodder, dry]	*0.01

*MRL set at the limit of quantitation

MRL STANDARD: TABLE 1

COMPOUND	FOOD	MRL (mg/kg)
CYHALOTHRIN		
DELETE:		
GC 0080	Cereal grains [except barley, wheat and sorghum]	T*0.05
ADD:		
GC 0080	Cereal grains [except barley, wheat and sorghum]	*0.01

MRL STANDARD: TABLE 4

COMPOUND	ANIMAL FEED COMMODITY	MRL (mg/kg)
CYHALOTHRIN		
ADD:		
AS 0081	Straw and fodder(dry) of cereal grains	*0.01
	Rape seed straw and fodder	*0.01

2.7 Potential risk to trade

Export of treated produce containing finite (measurable) residues of thiamethoxam and lambda-cyhalothrin may pose a risk to Australian trade in situations where (i) no MRL (import tolerance) is established in the importing country or (ii) where residues in Australian produce are likely to exceed an MRL (import tolerance) established in the importing country.

Plant commodities

Quantifiable residues of thiamethoxam and lambda-cyhalothrin are not expected to occur in cereal grain or canola seed. It is noted that whereas the thiamethoxam plant commodities residue definition for Australia, Codex and Japan is parent only, the definition for the European Union (EU) is the sum of thiamethoxam and clothianidin (equivalent to the E-form of the metabolite CGA322704) and the definition for the USA is the sum of thiamethoxam and the metabolite CGA322704. Although the presence of this metabolite was not measured in the available Australian residues trials, maize metabolism data indicate that residues of CGA322704 will be <LOQ in forage, grain and fodder at the proposed use rate. In addition, wheat, barley and canola residues trials data (JMPR 2010) indicate that residues of CGA322704 will be <LOQ in forage, grain/ seed and fodder. Residues arising in cereal grains and canola seed from the proposed use of *Cruiser Force Insecticide Seed Treatment* should not unduly prejudice trade between Australia and places outside Australia.

Forage and fodder of treated crops, as well as grain, may be used as livestock feed and oaten hay may be exported. Residues of thiamethoxam and lambda-cyhalothrin in oaten hay are expected to be below the LOQ, thus it is considered unlikely that the proposed use of *Cruiser Force Insecticide Seed Treatment* on oats would unduly prejudice trade.

Animal commodities

No increases to lambda-cyhalothrin and thiamethoxam animal commodity MRLs are proposed.

Thiamethoxam and lambda-cyhalothrin animal commodity MRLs have not been established in some major overseas markets such as Taiwan.

Muscle, Kidney and Fat

No quantifiable residues of either thiamethoxam or the metabolite CGA-322704, which together make up the residue definition for thiamethoxam in animal commodities in Australia, were observed in muscle (after feeding at 2 ppm thiamethoxam), kidney (at 6 ppm) or fat (at 20 ppm) in the available dairy cow transfer study and there is little risk that overseas MRLs for thiamethoxam in muscle, kidney or fat will be exceeded as a result of the proposed use as the highest expected feeding level is 0.55 ppm.

Liver and Milk - Residue Definition of Parent only

The thiamethoxam animal commodities residues definitions for Codex and Japan are parent only.

Only metabolite CGA-322704 residues were observed in liver in the animal transfer study at feeding levels up to and including 20 ppm. Parent residues were observed in milk at the 2 ppm feeding level at a maximum of 0.01 mg/kg, so parent will be below 0.01 mg/kg at the 0.55 ppm feeding level. There is little risk that the Codex and Japanese MRLs for thiamethoxam in liver and milk will be exceeded as a result of the proposed use.

Liver and Milk - EU and USA

The residue definition of the USA is the same as that of Australia (*i.e.* parent + metabolite CGA 322704 expressed as thiamethoxam). The residue definition of the EU differs slightly, as the sum of thiamethoxam and clothianidin, (the E form of CGA 322704) expressed as thiamethoxam. Of these two markets the lower thiamethoxam standard for liver is that of the EU (*0.01 mg/kg) while for milk the lower thiamethoxam standard is that of the USA (0.02 mg/kg). There is therefore little risk that MRLs for thiamethoxam in milk in these two markets will be exceeded as a result of the proposed use. The calculated maximum residues in liver were 0.017 mg/kg based on the maximum dietary burden from consideration of the highest residues in cereal forage at 56 days. The calculated maximum residues in liver were 0.0039 mg/kg based on the maximum dietary burden from consideration of the STMR in animal feed at 56 days. The residues levels in liver calculated on the basis of the STMR in animal feed at 56 days are therefore well below the established Codex, EU and Japanese MRLs for edible offal (mammalian) (all 0.01 mg/kg) and USA (0.04 mg/kg cattle and sheep by-products).

Given:

- The conservative nature of the calculations of the expected meat and milk residues with the HR value of 0.55 mg/kg for cereal forage at the proposed 56 day WHP, noting the STMR of 0.13 mg/kg;
- The clear decline in residues in forage over time (*e.g.* at a grazing WHP of 70 days the HR = 0.15 mg/kg and STMR = 0.05 mg/kg);
- That routine exposure of grazing and/or dairy animals to treated crops is unlikely, excepting possibly in the case of dual use cereals; and
- The bulking and blending that takes place in milk processing

The risk to Australian exports is expected to be low. However, APVMA welcomes any comments on the perceived trade risk and possible mitigation measures.

3 CONCLUSIONS

It is proposed to establish permanent grain and fodder MRLs for cyhalothrin and grain, fodder and forage MRLs for thiamethoxam. Comment is sought on the potential for thiamethoxam and lambda-cyhalothrin in *Cruiser Force Insecticide Seed Treatment* to prejudice Australian trade when it is used on canola and cereals for the control of various pests.

A more detailed technical assessment report on the evaluation of the trade implications of this chemical can be obtained by contacting the APVMA at (02) 6210 4748. Alternatively, the reports can be viewed at the APVMA Library, which is located at:

18 Wormald Street
Symonston ACT, 2609

Office hours: 9.00 - 5.00 (EST) Monday to Friday