Australian Government

Australian Pesticides and Veterinary Medicines Authority

Trade Advice Notice

on gamma-cyhalothrin in the product
Trojan Insecticide for use on oats, rye and triticale

APVMA product number 63180

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This publication is available from the APVMA website.

Contents

List of tables

Preface

The Australian Pesticides and Veterinary Medicines Authority (APVMA) is an independent statutory authority 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 all proposed extensions of use for existing products where there may be trade implications.

The information and technical data required by the APVMA to assess the safety of new chemical products and the methods of assessment must be undertaken according to accepted scientific principles. Details are outlined in regulatory guidance published on the APVMA website.

About this document

This Trade Advice Notice indicates that the 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 to vary the registration of Trojan Insecticide should 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. These grounds relate to the trade implications of the extended use of the product. Submissions should state the grounds on which they are based. Comments received outside these grounds cannot be considered by the APVMA.

Submissions must be received by the APVMA by close of business on 13 February 2024 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 organisation name (if relevant)
- email or postal address (if available)
- the date you made the submission.

Please note: submissions will be published on the APVMA's website, unless you have asked for the submission to remain confidential, or if the APVMA chooses at its discretion not to publish any submissions received (refer to the public consultation coversheet).

Please lodge your submission using the public consultation coversheet, which provides options for how your submission will be published.

Note that all APVMA documents are subject to the access provisions of the *Freedom of Information Act 1982* and may be required to be released under that Act should a request for access be made.

Unless you request for your submission to remain confidential, the APVMA may release your submission to the applicant for comment.

Written submissions should be addressed to:

Executive Director, Risk Assessment Capability

Australian Pesticides and Veterinary Medicines Authority

GPO Box 3262

Sydney NSW 2001

Phone: +61 2 6770 2300

Email: enquiries@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: apvma.gov.au.

Introduction

The APVMA has before it an application from FMC Australasia Pty Ltd to vary the registration of Trojan Insecticide containing 150 g/L gamma-cyhalothrin to add uses on oats, rye and triticale.

Based on the submitted data, no changes are required to the current cyhalothrin maximum residue limit (MRL) for GC 0080 Cereal grains {except Barley; Sorghum; Wheat} established at the limit of quantification (LOQ) at *0.01 mg/kg. As quantifiable residues are not expected to occur in oat, rye and triticale grain from the proposed use they do not require further consideration with respect to trade.

This trade advice notice considers the risk to trade in oaten hay, as this is the first foliar use of cyhalothrin on oats and residues are expected to occur in forage and fodder.

Trade considerations

Commodities exported

Oaten hay is considered to be a major export commodity[1], as are commodities of animal origin, such as meat, offal and dairy products, which may be derived from livestock fed feeds produced from treated oats, rye and triticale. Residues in these commodities resulting from the use of Trojan Insecticide may have the potential to unduly prejudice trade. As the maximum livestock dietary burden for cyhalothrin will not increase from the proposed use, noting the existing Forage and fodder of cereal grains MRL at 2 mg/kg, the risk to trade in animal commodities remains unchanged and does not require further consideration.

Destination and value of exports

According to the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), almost 1.2 million tonnes of hay was exported from Australia in 2020, amounting to $584 million in 2019–20. Oaten hay is the dominant hay exported from Australia[2]. The exports of oaten hay in 2020 were close to 1 million tonnes[3]. In 2022–23, the value of oaten hay exports was around $349 million[4].

Table 1: Key export markets for Australian fodder crops (including oaten hay)[5]

Crop	Major destinations
Fodder crops (including oaten hay)	Japan, Korea, China and Taiwan

[1] Australian Pesticides and Veterinary Medicines Authority (APVMA), 2024. *APVMA Regulatory Guidelines – Data Guidelines: Agricultural - Overseas trade (Part 5B)*, APVMA website, 20 July 2020, accessed November 2023.

[2] Australian Fodder Industry Association (AFIA), 2023. *About Fodder*, AFIA website, accessed November 2023.

[3] AgriFutures Australia, 2020. *Improved oat varieties*, AgriFutures Australia website, accessed November 2023.

[4] Basic Commodities, 2023. *Australian Hay Update*, Basic Commodities website, accessed November 2023.

[5] AgriFutures Australia, 2024. *Export fodder*, AgriFutures Australia website, accessed November 2023.

Proposed Australian use pattern

Table 2: Proposed use pattern – Trojan Insecticide (150 g/L gamma-cyhalothrin)

Crop	Pest	Rate/concentration	Critical comments
Oats, triticale and cereal rye	Pasture Webworm (*Hednota* spp.)	10 mL/ha (1.5 g ai/ha)	Pre-seeding: The product can be tank mixed with knock down herbicides. Post crop emergence: Inspect crop regularly from sowing. Spray at first sign of damage. Use a minimum of 50 L water/ha. Apply at first sign of infestation before larvae are 10 mm long.
	Pink or Brown Cutworm (*Agrotis munda*) Common Cutworm (*Agrotis infusa*)	10 or 15 mL/ha (1.5 or 2.25 g ai/ha)	For best results apply at first sign of infestation before larvae are 10 mm long. If larvae are larger than 10 mm use the higher rate. Use a minimum of 50 L water.
	Common armyworm (*Leucania convecta*) Southern armyworm (*Persectania ewingii*) Inland armyworm (*Persectania dyscrita*) Northern armyworm (*Mythimna separata*)	30 mL/ha (4.5 g ai/ha)	Apply before 'head lopping' occurs when larvae numbers exceed economic spray thresholds. Spray on the cool of the day (late afternoon) when larvae are most active and feeding. Target small to medium sized larvae to minimise crop damage. Spray to achieve good crop penetration using a medium spray quality and minimum water volumes of 80 to 100 L/ha. Poor control may occur on crops that have lodged or have large canopies. Monitor the crop closely and re-treat if necessary.
	Blackhead Pasture Cockchafer (*Aphodius tasmaniae*)	17 or 35 mL/ha (2.55 or 5.25 g ai/ha)	Treat as soon as possible after the autumn rains stimulate egg hatching and activity of existing larvae. This can be ascertained by monitoring soil populations in known areas. For best results spray when the larvae have surfaced to feed after rain. Preferably use a boom spray delivering 70 to 100 L water/ha. Use the lower rate until early June and the higher rate after mid-to-late June. DO NOT USE ULV APPLICATION FOR THIS PEST.
	Redlegged Earthmite (*Halotydeus destructor*)	8 mL/ha (1.2 g ai/ha)	If mites are present on an establishing crop, apply at first sign of crop emergence.

Crop	Pest	Rate/concentration	Critical comments
	Balaustium mite (*Balaustium medicagoense*) Blue oat mite (*Penthaleus major*)	16 or 24 mL/ha (2.4 or 3.6 g ai/ha)	Monitor crop regularly for reinfestation and respray if necessary. Use the higher rate for more rapid knockdown of *Balaustium* and Blue oat mite.
	Aphids (*Rhopalosiphum* spp.) (Barley Yellow Dwarf virus vectors)	10 or 15 mL/ha (1.5 or 2.25 g ai/ha)	To control aphids, sprays should be applied at 4 and 8 weeks after emergence to reduce aphid colonisation and suppress Barley yellow dwarf virus. Use the higher rate when greater than 15 aphids on 50% of tillers is expected during the season.
	Russian wheat aphid (*Diuraphis noxia*)	35 mL/ha (5.25 g ai/ha)	Initiate applications when the industry economic spray threshold is reached. Thorough spray coverage is essential by matching appropriate spray volumes to crop size and a medium spray quality so as to treat all parts of the crop canopy including the undersides and in between leaves where possible. Aphids present in tightly rolled leaves may not be completely controlled. Continue to monitor the crop post-spray and make further insecticide applications as required.

Withholding periods

Harvest

Oats, cereal rye, triticale: DO NOT harvest for 14 days after application.

Grazing

Oats, cereal rye, triticale: DO NOT graze or cut for stock food for 14 days after application.

Results from residues trials presented to the APVMA

The proposed use for oats, triticale and rye is for a foliar application of gamma-cyhalothrin, applied at first sign of infestation at rates of up to 5.25 g ai/ha in conjunction with a harvest and grazing withholding period of 14 days.

Oats forage and fodder

Four Australian GLP trials on oats have been provided:

Cyhalothrin residues in oats forage at 11 to 14 days, following a single foliar application of gamma-cyhalothrin between BBCH 14 to 22 at 5.3 g ai/ha (~1 × proposed rate), were < 0.01 (2) (LOQ), 0.12 and 0.13 mg/kg on a dry weight basis (n=4).

Cyhalothrin residues in oats straw at 12 to 14 days, following a single foliar application of gamma-cyhalothrin between BBCH 85 to 89 at 5.3 to 5.5 g ai/ha (~1 × proposed rate), were 0.087, 0.092, 0.16 and 0.26 mg/kg (n=4).

Based on the available data, the currently established cyhalothrin MRL of 2 mg/kg for Forage and fodder of cereal grains remains appropriate for the proposed use in conjunction with a grazing withholding period of 14 days.

Codex Alimentarius Commission and overseas MRLs

The Codex Alimentarius Commission (Codex) is responsible for establishing Codex maximum residue limits (CXLs) for pesticides and veterinary medicines. 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. Cyhalothrin (includes lambda-cyhalothrin) has been considered by Codex. The following relevant Codex CXLs and overseas MRLs have been established for cyhalothrin.

Table 3: Current Australian and overseas MRLs/tolerances for cyhalothrin

Commodity	Tolerance for residues arising from the use of cyhalothrin (mg/kg)				
	Australia[6]	EU[7]	Japan[8]	Codex[9]	USA[10]
Residue definition	Cyhalothrin, sum of isomers	Lambda-cyhalothrin (includes gamma-cyhalothrin((sum of R,S and S,R isomers) (F)	Cyhalothrin (includes lambda-cyhalothrin)	Cyhalothrin (sum of all isomers)	Combined residues of the pyrethroid lambda-cyhalothrin, 1:1 mixture of (S)-α-cyano-3-phenoxybenzyl-(Z)-(1R,3R)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate and (R)-α-cyano-3-phenoxybenzyl-(Z)-(1S,3S)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate and its epimer expressed as epimer of lambda-cyhalothrin, a 1:1 mixture of (S)-α-cyano-3-phenoxybenzyl-(Z)-(1S,3S)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate and (R)-α-cyano-3-phenoxybenzyl-(Z)-(1R,3R)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate
Oaten hay	2 (Forage and fodder of cereal grains)	–	0.6 (Forage and fodder)	2 (Straw and hay of cereal grains (excluding pseudocereals) (subgroup))	2.0 (Oat, hay)

[6] Department of Agriculture, Fisheries and Forestry (DAFF), 2023. *Agricultural and Veterinary Chemicals Code (MRL Standard for Residues of Chemical Products) Instrument 2023*, Australian Government Federal Register of Legislation website, accessed November 2023.

[7] European Commission, 2024. *EU Pesticide residue(s) and maximum residue levels (mg/kg)*, European Commission website, accessed November 2023.

[8] Food and Agricultural Minerals Inspection Center (FAMIC), 2023. *Feed MRLs*, FAMIC website, accessed November 2023.

[9] Food and Agriculture Organisation of the United Nations (FAO), 2024. *Codex Alimentarius – International Food Standards Pesticides Database Search*, FAO website, accessed November 2023.

[10] Electronic Code of Federal Regulations (eCFR), 2024. *USA Electronic Code of Federal Regulations*, eCFR website, accessed November 2023.

Current Australian MRLs for cyhalothrin

Table 4: Current MRL Standard – Table 1

Compound		Food	MRL (mg/kg)
Cyhalothrin			
GC	0640	Barley	0.2
GC	0080	Cereal grains {except Barley; Sorghum; Wheat}	*0.01
GC	0651	Sorghum	0.5
GC	0654	Wheat	*0.05

Table 5: Current MRL Standard – Table 4

Compound	Food	MRL (mg/kg)
Cyhalothrin		
	Forage and fodder of cereal grains	2

Potential risk to trade

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

The currently established cyhalothrin MRL of 2 mg/kg for Forage and fodder of cereal grains is equivalent to the Codex and US MRL for Straw and hay of cereal grains (excluding pseudocereals) (subgroup) and Oat, hay, respectively. It is greater than the Japan MRL for Forage and fodder; however, the high residues (HR) in oat forage and fodder in the available trials at 0.26 mg/kg was below the Japanese MRL. It is noted that an oaten hay MRL is currently not established in Japan.

Conclusion

FMC Australasia Pty Ltd Pty Ltd has applied to vary the registration of Trojan Insecticide containing gamma-cyhalothrin to add a use on oats, rye and triticale.

Comment is sought on the potential for the use of Trojan Insecticide on oats for hay production to prejudice Australian trade when used according to the proposed label instructions.