



Australian Government

**Australian Pesticides and
Veterinary Medicines Authority**



Trade Advice Notice

on bifenthrin for use on mung beans

Permit number 92184

September 2022

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ISSN 2200-3894 (electronic)

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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 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 a permit for use of bifenthrin on mung beans should be granted. Submissions should relate only to matters that the APVMA is required by legislation to consider 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 25 October 2022 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 considered 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](#).

Introduction

The APVMA has before it a minor use permit application from Pulse Australia Limited for the use of bifenthrin on mung beans, for the control of redbanded shield bug and green vegetable bug.

It is noted that the registered use pattern on navy beans (for example product numbers 56500, 81526 and 60987) is similar to that currently proposed for mung beans.

Trade considerations

Commodities exported

Pulses (lupins, field peas, chickpeas, faba beans, navy beans, and mung beans) are considered to be major export commodities in the APVMA's Part 5B guidelines¹, as are commodities of animal origin, such as meat, offal and dairy products, which may be derived from livestock fed feeds produced from treated field peas. Residues in these commodities resulting from the use of bifenthrin may have the potential to unduly prejudice trade.

No changes are required to the animal commodity MRLs for bifenthrin, therefore the risk to trade with respect to animal commodities is considered to be low and does not require further consideration. The risk to trade with respect to the proposed use on mung beans is considered below.

Destination and value of exports

Australian exports of pulses (lupins, field peas, chickpeas, faba beans, mung beans, navy beans and lentils) totalled 1520 kt, 1731 kt and 2560 kt (value \$1,015 million, \$1,263 million and \$1,647 million) respectively, in 2018–19, 2019–20 and 2020–21².

Over 90% of Australian mung beans are exported to countries such as India, Indonesia, Vietnam, Sri Lanka and Thailand, with Queensland the major exporter of exported mung beans³.

¹ Australian Pesticides and Veterinary Medicines Authority, [APVMA Regulatory Guidelines – Data Guidelines: Agricultural data guidelines – Pesticides: Overseas trade \(Part 5B\)](#), APVMA website, 20 July 2020, accessed 8 September 2022.

² Australian Government, Department of Agriculture, Fisheries and Forestry, Agricultural Commodity Statistics 2021, [Agricultural commodities and trade data - DAFF \(agriculture.gov.au\)](#), accessed 8 September 2022.

³ Agrifutures Australia, [Mungbeans | AgriFutures Australia](#), Agrifutures Australia website, accessed 8 September 2022.

Proposed Australian use pattern

Table 1: Proposed use pattern for mung beans being considered by the APVMA

Venom 100 EC Insecticide (P56500) and all other registered products containing 100 g/L bifenthrin as the only active constituent

Venom 240 SC Insecticide (P81526) and all other registered products containing 240 g/L bifenthrin as the only active constituent

Talstar 250 EC Insecticide/ Miticide (P60987) and all other registered products containing 250 g/L bifenthrin as the only active constituent

Crop	Pest	Rate	Critical comments
Mung beans	Redbanded shield bug and green vegetable bug (<i>Piezodorus oceanicus</i> and <i>Nezara viridula</i>)	100 g/L product: 600 to 800 mL/ha (=60-80 g a.i./ha)	Apply a maximum of two foliar applications per season by boomspray at a minimum 10 to 14 days retreatment interval. Apply as indicated by field checks.
		240 g/L product: 250 to 330 mL/ha (=60 to 79.2 g a.i./ha)	Apply in a spray volume of 50 to 200 L/ha for ground application and a minimum of 20 L/ha for aerial application.
		250 g/L product: 240 to 320 mL/ha (=60 to 80 g a.i./ha)	Dangerous to bees. DO NOT spray while bees are actively foraging on and around the treatment area. The risk to bees may be reduced by spraying in the early morning or late evening while bees are not foraging, provided that surface temperature inversion conditions are not present.

Withholding periods

Harvest: DO NOT harvest for 14 days after application.

Grazing: DO NOT graze or cut for stock food for 14 days after application.

Restrains: DO NOT spray while bees are actively foraging on and around the treatment area

Export of treated produce – growers should note that MRLs or import tolerances do not exist in all markets for produce treated with bifenthrin. If you are growing produce for export, please check with the permit holder for the latest information on MRLs and import tolerances before using bifenthrin.

Results from residues trials presented to the APVMA

Mung beans

In support of the application, residues data for dry beans, soya beans and dried peas from trials conducted in the USA in 2001, which was evaluated by the 2010 Joint Meeting on Pesticide Residues (JMPR)⁴, were considered. A previously submitted navy bean trial was also considered for MRL estimation.

In nine USA trials, the highest residues observed in dry beans at 13 to 15 days after the last application (DALA), after three applications of bifenthrin at 120 g a.i./ha (1.5× the maximum proposed application rate) were, after scaling to expected residues at 1× the maximum proposed application rate, in rank order: 0.007, 0.02 (2), 0.047, <0.05 (3) and 0.067 (2) mg/kg (STMR⁵=0.05 mg/kg, n=9). The OECD MRL calculator estimates a Maximum Residue Limit (MRL) of 0.15 mg/kg.

In fourteen USA trials, the highest residues observed in soya beans at 13 to 18 DALA, after three applications of bifenthrin at 110 g a.i./ha (1.38× the maximum proposed application rate) were, after expressing <0.05 mg/kg as the actual measured residue where indicated, and after scaling to expected residues at 1× the maximum proposed application rate, in rank order: 0.014, 0.022, 0.029, <0.05 (9), 0.051 and 0.13 mg/kg (STMR=0.05 mg/kg, n=14). The OECD MRL calculator estimates an MRL of 0.15 mg/kg with the proviso "High uncertainty of MRL estimate due to high level of censoring".

In six USA trials, the highest residues observed in dry peas at 14 to 15 DALA, after two applications of bifenthrin at 110 to 120 g a.i./ha (1.38 to 1.5× the maximum proposed application rate) were, after expressing <0.05 mg/kg as the actual measured residue where indicated, and after scaling to expected residues at 1× the maximum proposed application rate, in rank order: 0.013 (3), 0.015 (2) and <0.05 mg/kg (STMR=0.014 mg/kg, n=6). The OECD MRL calculator estimates an MRL of 0.15 mg/kg with the proviso "High uncertainty of MRL estimate due to small dataset".

In a previously considered residues trial on navy beans which was conducted with two applications at 60 and 120 g a.i./ha (0.75 and 1.5× the proposed maximum application rate for mung beans), no quantifiable residues of bifenthrin were observed at a 14-day withholding period (WHP).

Based on the available pulse data in dry beans, soybeans, dry peas and navy beans [highest residue (HR)=0.13 mg/kg, STMR=0.05 mg/kg for all scaled data, n=30], a temporary MRL of 0.2 mg/kg is proposed for VD 0536 Mung bean (dry), in conjunction with the proposed harvest WHP of 14 days.

As the registered use of bifenthrin on navy beans is similar to the proposed permit use on mung beans, it is considered that an MRL should be established at the same level (0.2 mg/kg) for VD 0526 Common bean (dry), noting that only limited residues data were available at the time of residues evaluation of the use on navy beans (common beans) and that additional relevant data is now available.

⁴ Food and Agriculture Organisation of the United Nations, The Joint FAO/WHO Meeting on Pesticide Residues, [The 2010 JMPR evaluation of bifenthrin](#), Food and Agriculture Organisation of the United Nations website, accessed 8 September 2022.

⁵ STMR= Supervised Trial Median Residue

It is noted that the MRLs for VD 0561 Field pea (dry) at T*0.01 mg/kg and VD 0545 Lupin (dry) at T*0.02 mg/kg, were recommended at the time of the residues evaluation for Permit 878 (valid from 28 February 1998 until 1 August 1998). As there are currently no permit uses of bifenthrin on field peas or lupins, but there are registered uses on these crops, residues of which would be covered by the Pulses MRL at the LOQ, these temporary MRLs will be removed from Table 1 of the MRL Standard.

The current MRL for VD 0070 Pulses {except Field pea (dry); Lupin (dry)} at *0.02 mg/kg which currently covers residues arising from the registered pre-emergent or early post-emergent uses on faba beans, field peas and lupins at 20 g a.i./ha and navy beans at 80 g a.i./ha, will therefore be amended to VD 0070 Pulses {except Common bean (dry); Mung bean (dry)} at *0.02 mg/kg.

Overseas registration and approved label instructions

The Applicant submitted a registered label from the USA for Batallion 10 WSP (10.0% bifenthrin). Foliar use on dried beans in the USA is allowed at up to 112 g a.i./ha (three applications at a 14-day harvest WHP).

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. Bifenthrin has been considered by Codex.

Table 2: Relevant international MRLs for bifenthrin on pulses

Commodity	Tolerance for residues arising from the use of bifenthrin (mg/kg)							
	Australia	EU ⁶	Codex ⁷	Japan ⁸	Korea ⁹	USA ¹⁰	China ¹¹	Taiwan ¹²
Mung bean (dry)	T0.2 (proposed)	-	-	-	0.05	-	-	-
Dry beans (dry)	-	0.3	-	0.3	-	0.15 (Pea and bean, dried shelled, except soybean, subgroup 6C)	-	0.5
Pulses	-		0.3	-	-	-	-	-
Other pulses	-	0.3 (Lentils, Peas, Lupins/Lupini beans, Others)	-	0.3 (Dried soybeans, Peas, Broad beans, Other pulses)	0.05 (East (cowpea), Kidney bean, Pea, Red bean), 0.5 (Soybean, Unripe bean)	0.2 (Soybean seed)	0.05 (Pea), 0.3 (Soybean)	-

⁶ European Commission (EC), 2015. [EU Pesticide residue\(s\) and maximum residues levels \(mg/kg\)](#), European Commission website, accessed 8 September 2022.

⁷ Food and Agriculture Organisation of the United Nations (FAO), 2022. [Codex Alimentarius: 178 – Bifenthrin](#), FAO website, accessed 8 September 2022.

⁸ Japanese Food Chemistry Research Promotion Foundation (JFCRPF), 2022. [Table of MRLs for Agricultural Chemicals](#), JFCRPF website, accessed 8 September 2022.

⁹ Ministry of Food and Drug Safety Korea (FSK), 2015. [Pesticide MRLs for agricultural commodities](#), FSK website, accessed 8 September 2022.

¹⁰ Electronic Code of Federal Regulations (eCFR), 2022. [Tolerances and Exemptions for Pesticide Chemical Residues in Food](#), eCFR website, accessed 8 September 2022.

¹¹ United States Department of Agriculture Foreign Agricultural Service (USDA), 2021. [China: Maximum Residue Limits for Pesticides in Foods, Global Agricultural Information Network report](#), 24 August 2021, accessed 8 September 2022.

¹² Food and Drug Administration (FDA), Taiwan, 2022. [Food and Drug Administration Taiwan, Standards for Pesticide Residue Limits in Foods](#), accessed 8 September 2022.

Current and proposed Australian MRLs for bifenthrin

Table 3: Current relevant MRLs for bifenthrin in Table 1 of the MRL Standard

Compound		Food	MRL (mg/kg)
Bifenthrin			
MO	0105	Edible offal (mammalian)	0.5
PE	0112	Eggs	*0.05
VD	0561	Field pea (dry)	T*0.01
VD	0545	Lupin (dry)	T*0.02
MM	0095	Meat (mammalian) [in the fat]	2
ML	0106	Milks	0.5
PO	0111	Poultry, edible offal of	*0.05
PM	0110	Poultry meat [in the fat]	*0.05
VD	0070	Pulses {except Field pea (dry); Lupin (dry)}	*0.02

Table 4: Current relevant MRLs for bifenthrin in Table 4 of the MRL Standard

Compound		Food	MRL (mg/kg)
Bifenthrin			
AL	0061	Bean fodder	20
AL	1030	Bean forage (green)	20
		Broad bean, dry [faba bean] forage	1
		Broad bean, dry [faba bean] fodder	0.02
		Common Bean, dry [navy bean] fodder	1
		Common Bean, dry [navy bean] forage	5

Table 5: Amendments to Table 1 of the MRL Standard for bifenthrin

Compound	Food	MRL (mg/kg)
Bifenthrin		
Delete:		
VD 0561	Field pea (dry)	T*0.01
VD 0545	Lupin (dry)	T*0.02
VD 0070	Pulses {except Field pea (dry); Lupin (dry)}	*0.02
Add:		
VD 0526	Common bean (dry)	0.2
VD 0536	Mung bean (dry)	T0.2
VD 0070	Pulses {except Common bean (dry); Mung bean (dry)}	*0.02

Table 6: Amendments to Table 4 of the MRL Standard for bifenthrin

Compound	Food	MRL (mg/kg)
Bifenthrin		
Add:		
	Mung bean fodder	T1
	Mung bean forage	T5

Potential risk to trade

Export of treated produce containing finite (measurable) residues of bifenthrin 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.

Mung beans

The proposed use of bifenthrin on mung beans requires the establishment of a finite MRL at 0.2 mg/kg (HR=0.13 mg/kg, STMR=0.05 mg/kg of all scaled data). There is a potential risk to trade as finite residues of bifenthrin may be expected in exported mung beans. The proposed MRL for mung beans is however lower than in most overseas markets, including Codex which a number of countries refer to. Lower MRLs are established in the USA at 0.15 mg/kg and in Korea at 0.05 mg/kg. Noting however, that the STMR of all scaled residues data (0.05 mg/kg) is below these MRL values, with bulking and blending of samples the risk to Australia's export trade is considered to be low.

Conclusion

Pulse Australia Limited has applied for a permit for the use of bifenthrin on mung beans, for the control of redbanded shield bug and green vegetable bug.

Comment is sought on the potential for the proposed use to prejudice Australian trade of mung beans and the ability of industry to manage any potential trade risk.