



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



## TRADE ADVICE NOTICE

on Terbutylazine in the Product Terbyne 750 WG Herbicide

APVMA Product Number 56973

APRIL 2013

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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.

In undertaking this task, the APVMA works in close cooperation with advisory agencies, including the Department of Health and Ageing, Office of Chemical Safety and Environmental Health (OCSEH), Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC), and State Departments of Primary Industry.

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 the APVMA's publication *Ag MORAG: Manual of Requirements and Guidelines*.

## 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 to vary the registration of **Terbyne 750 WG Herbicide** containing the existing active constituent terbuthylazine 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 **2 May 2013** 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)**<sup>1</sup> 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

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Australian Pesticides and Veterinary Medicines Authority

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**Phone:** +61 2 6210 4748

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**Email:** [pesticides@apvma.gov.au](mailto:pesticides@apvma.gov.au)

## Further information

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

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<sup>1</sup> 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 Sipcam Pacific Australia Pty Ltd to vary the registration of the product, *Terbyne 750 WG Herbicide*, containing 750 g/L terbuthylazine, to include the control of various broadleaf weeds in fallow situations (prior to planting mung beans, soybeans, wheat, barley and oats). The proposed use requires the establishment of permanent MRLs for terbuthylazine in cereal grains. Meat and dairy products are major export commodities and animals exposed to residues arising from the proposed use are considered.

The potential for terbuthylazine residues in grains and in animal commodities arising from the proposed use to unduly prejudice trade is discussed below.

## 2 TRADE CONSIDERATIONS

### 2.1 Commodities exported

Cereals are considered to be a major export commodity,<sup>2</sup> as are commodities of animal origin, such as meat, offal and dairy products, which may be derived from livestock fed feed containing residues arising from the proposed use. Oaten hay is also a major export commodity.

### 2.2 Destination and value of exports

Australian exports of wheat totalled 18639 kt and were valued at ~ \$5526m in 2010–11.<sup>3</sup> Australian exports of coarse grains totalled 5337 kt and were valued at ~\$1493m in 2010–11.<sup>3</sup> Barley was the most significant export (~\$1295m) and oat exports were valued at ~\$37m. Triticale exports were worth ~\$149m in (2010–2011).<sup>3</sup>

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

**Table 1: Major destinations for Australian cereal exports**

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

The significant export markets for animal commodities are defined in Part 5B of Ag MoRaG<sup>2</sup>.

<sup>2</sup> [http://www.apvma.gov.au/morag\\_ag/vol\\_3/part\\_05b\\_trade.php](http://www.apvma.gov.au/morag_ag/vol_3/part_05b_trade.php)

<sup>3</sup> [http://adl.brs.gov.au/data/warehouse/agcstd9abcc002/agcstd9abcc0022011/ACS\\_2011\\_1.0.3.pdf](http://adl.brs.gov.au/data/warehouse/agcstd9abcc002/agcstd9abcc0022011/ACS_2011_1.0.3.pdf)

## 2.3 Proposed Australian use-pattern

The proposed Australian use pattern for *Terbyne 750 WG Herbicide* (750 g/L terbuthylazine) is summarised below.

**Table 2: *Terbyne 750 WG Herbicide* (750 g/L terbuthylazine)**

CROP	SITUATION	WEEDS	RATE	CRITICAL COMMENTS
Application to fallows prior to planting mung beans, soybeans, barley, oats and wheat as directed in the <b>Fallows</b> section of the label  (NSW and QLD only)	Pre-emergence	African turnip weed, burr medic, black bindweed, corn gromwell (white iron weed, sheep weed), dead nettle, indian hedge mustard, flax leaf fleabane, long haired poppy, mint weed, ox tongue, prickly lettuce, shepherd's purse, sow thistle/ milk thistle, toadrush, wild gooseberry, wild radish, wild turnip, wireweed/ hogweed ( <i>Polygonum aviculare</i> )  <b>Suppression of:</b> annual ryegrass, bladder ketmia, boggabri weed, caltrop/ yellow vine, doublegee/ spiny emex, dwarf amaranth, phalaris, pigweed, wild oats, wild radish.	1.0–1.4  (750 1050 g ai/ha)	Apply to moist soil or when rain is imminent and prior to germination of weeds. Use the higher rate where the soil is covered by more than 50% trash/stubble/weeds, for heavy weed pressure or for longer weed control. If weeds are present, cultivate or apply a knockdown-herbicide prior to applying Terbyne. Terbyne may also be tank-mixed with certain knock-down herbicides. See Compatibility section of the label. Avoid spray overlap and double spraying on headlands and corners. Refer to the Fallows section of the label for plant-back instructions.

### WITHHOLDING PERIODS

Harvest: NOT REQUIRED WHEN USED AS DIRECTED

Grazing: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 6 WEEKS AFTER APPLICATION

### Fallow Application

Terbyne can be applied to fallow situations to provide control of certain weeds emerging prior to sowing nominated crops below. Apply to moist soil or when rain is imminent and prior to germination of weeds.

If weeds are present, cultivate or apply a knockdown-herbicide prior to applying Terbyne. Terbyne may also be tank-mixed with certain knock-down herbicides. See **Compatibility** section of the label. Observe the following plant-back intervals between the date of application and the intended planting date of the following crop thus.

FOLLOWING CROP AFTER APPLICATION TO FALLOW	TERBYNE 1.0 kg/ha	TERBYNE 1.4 kg/ha
Mung beans, soybeans	3 months	4 months
barley, oats, wheat	4 months	5 months

## 2.4 Results from residues trials presented to the APVMA

The proposed use of *Terbyne 750 WG Herbicide* involves application of terbuthylazine in fallow situations that may be grazed prior to planting mung beans, soybeans, barley, oats and wheat at a rate of 750–1050 g ai/ha.

### *Primary feed commodities*

Residues data in forage of chick peas, field peas, faba beans, lupins, pulses and sorghum was previously assessed (*Terbyne 750 WG Herbicide*, 56973/40585), with harvest intervals ranging from 42 days (6 weeks) to 92 days. Levels of terbuthylazine in forage on a dry weight basis ranged from 0.14 to 3.1 mg/kg.

In previously reviewed data (*Terbyne 750 WG Herbicide*, 56973/52784), residues of terbuthylazine were reported in the forage of sorghum following application of terbuthylazine as either a pre-emergent spray at 1.05 kg ai/ha followed by a post emergent spray at 1.50 kg ai/ha or a pre-emergent spray at 1.50 kg ai/ha followed by a post emergent spray at 0.83 kg ai/ha. Residues of terbuthylazine in sorghum forage 28 days after treatment were 0.043, 0.054, <0.06, 0.11, 0.26, 0.41, 0.78 and 2.98 mg/kg on a dry weight basis.

Based on the available data, a primary feed commodities MRL of 5 mg/kg is recommended in conjunction with a six week grazing withholding period.

### *Rotational crops*

A rotational crop metabolism study involved application of <sup>14</sup>C-labelled terbuthylazine to small plots at a rate of 1 kg ai/ha, close to the maximum label rate of 1050 g ai/ha. At a plant-back interval of 120 days residues of terbuthylazine (parent) were below the limits of quantitation (0.02 mg/kg for grains of legumes, 0.01 mg/kg for grains of cereals) in mature spinach leaves, radish leaves, radish roots, wheat grain, wheat straw and wheat chaff. Previously considered data for post-emergent use on sorghum, canola and pulses resulted in the establishment of LOQ MRLs following application at up to 1050 g ai/ha. Quantifiable residues of terbuthylazine are not expected in the grain of mung beans, soybeans, barley, oats and wheat as a result of the proposed use. The previously established pulses (VD 0070) MRL of \*0.02 mg/kg is appropriate for mung beans and soybeans. A cereal grains (GC 0080) MRL of \*0.01 mg/kg will be established to cover the proposed use on barley, oats and wheat.

Residues of terbuthylazine in newly emergent wheat forage (as received) were below the LOQ, (forage and straw 0.05 mg/kg) in the rotational metabolism study following application to the soil at a rate of 1 kg ai/ha (1x) and a PBI of 120 days. Detectable residues of terbuthylazine are not expected in mung bean, soybean, barley, oat and wheat forage following the proposed use.

### *Animal Commodities*

The maximum livestock dietary burden for cattle will be as a result of the consumption of primary feed commodities with an estimated high residue of 3.1 mg/kg as 100% of the diet.

Two livestock feeding studies, one for beef cattle and the other for lactating dairy cattle, were previously considered (*Terbyne 750 WG Herbicide*, NCRIS No: 56973, ATS No: 40585). Given that no residues were detected in the milk of dairy cattle given daily doses of terbuthylazine equivalent to 15 mg/kg in feed, and

only very low residues were detected at the LOQ in the liver of one animal in the group of beef cattle given daily doses equivalent to 17.5 mg/kg in feed, the current animal commodity MRLs, established at the LOQ, for meat (mammalian), edible offal (mammalian) and milk remain appropriate.

A feeding or metabolism study for poultry is not available. Residues in poultry feeds are expected to be below the limit of quantitation. Therefore, quantifiable residues of terbutylazine are unlikely to be found in the eggs, meat or offal of poultry given feed derived from terbutylazine-treated crops, and the current poultry commodity MRLs are appropriate.

## 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. Terbutylazine has not been considered by Codex. The following relevant international MRLs/tolerances have been established.

**Table 3: Comparison of terbutylazine MRLs (mg/kg) for cereals**

COUNTRY	COMMODITY	TOLERANCE (mg/kg)
<b>Australia</b> (proposed)	Cereal grains [except maize]	*0.01
<b>EU</b>	Barley	*0.05
	Oats	*0.05
	Wheat	*0.05
<b>Korea</b>	Other Agricultural Products	0.05

Residue definitions for terbutylazine are terbutylazine.<sup>4</sup>

<sup>4</sup> Terbutylazine MRLs for cereals are not known to be established in Japan, USA, China, Russia or Taiwan.

## 2.6 Current and proposed Australian MRLs for terbutylazine

Current relevant MRLs and the residue definition for terbutylazine are presented below. A full listing of MRLs can be found at [www.apvma.gov.au/residues/standard.php](http://www.apvma.gov.au/residues/standard.php). No changes to current MRLs or the residue definition have been proposed.

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

MRL STANDARD: TABLE 1

COMPOUND	FOOD	MRL (mg/kg)
TERBUTHYLAZINE		
GC 0645	Maize	T*0.02
VD 0070	Pulses	*0.02
GC 0651	Sorghum	*0.01

MRL STANDARD: TABLE 3

COMPOUND	RESIDUE
TERBUTHYLAZINE	Terbutylazine

MRL STANDARD: TABLE 4

COMPOUND	FOOD	MRL (mg/kg)
TERBUTHYLAZINE		
	Forage of pulse crops (green)	5
AS 0645	Maize fodder	T*0.1
AF 0645	Maize forage	T*0.1
AF 0651	Sorghum forage (green)	5
AS 0651	Sorghum straw and fodder, dry	*0.02
	Straw and fodder of pulse crops (dry)	*0.05

The following changes are proposed to Australian terbuthylazine MRLs:

Table 5: Proposed changes to the MRL Standard Table 1 and Table 4

MRL STANDARD: TABLE 1

COMPOUND	FOOD	MRL (mg/kg)
TERBUTHYLAZINE		
DELETE:		
GC 0651	Sorghum	*0.01
ADD:		
GC 0080	Cereal grains [except maize]	*0.01

MRL STANDARD: TABLE 4

COMPOUND	FOOD	MRL (mg/kg)
TERBUTHYLAZINE		
DELETE:		
AF 0651	Forage of pulse crops (green)	5
	Sorghum forage (green)	5
ADD:		
	Primary feed commodities [except fodder and forage sweet corn; maize fodder; maize forage; rape seed (canola) fodder; rape seed (canola) forage; sorghum straw and fodder, dry; straw and fodder of pulse crops (dry)]	5

## 2.7 Potential risk to trade

Export of treated produce containing finite (measurable) residues of terbutylazine 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 risk to Australian trade in cereal grains is considered to be low, as detectable residues of terbutylazine are not expected to be found in cereal grains following the proposed use. The overall risk to trade in animal commodities is considered to be low, as detectable residues are not expected to be found in the meat, offal or milk of animals given feed from treated areas.

### 3 CONCLUSIONS

Detectable residues are not expected to be found in traded commodities as a result of the proposed use. Comment is sought on the potential for terbutylazine residues resulting from the proposed use of *Terbyne 750 WG Herbicide* on fallows to prejudice Australian trade.