Trade Advice Note
on

CHLOROTHALONIL

in the product

Crop Care Barrack 720 Fungicide

(APVMA Product Number 53884)

Australian Pesticides & Veterinary Medicines Authority

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Trade Advice Note on the Product

Crop Care Barrack 720 Fungicide
(720 g/L chlorothalonil)

Introduction

The Australian Pesticides and Veterinary Medicines Authority (APVMA) has before it an application from Crop Care Australasia Pty Ltd to approve a label for the registered product Crop Care Barrack 720 Fungicide to include use on chickpeas and lentils for the control of Ascochyta blight (*Ascochyta rabeie*) of chickpeas and Ascochyta blight (*Ascochyta lentis*) and grey mould (*Botrytis cinerea*, *Botrytis fabae*) of lentils. It is also proposed to remove the feeding restraints that currently apply to faba beans and peas. The application requires the establishment of maximum residue limits (MRLs) for food and animal feed commodities.

The APVMA invites any person to submit a relevant written submission with respect to whether the proposed new use is likely to unduly prejudice trade or commerce between Australia and Australia's trading partners. **Please provide your submission by 14 June 2006**. Any submissions provided after this date may be unable to be considered before the regulatory decision is made. All submissions should be addressed to the above contact.

Trade consideration

1. Commodities exported

This application sought the approval of chlorothalonil for use in chickpeas and lentils. Changes to the use pattern in faba beans and peas have also been proposed. With the exception of peas, all of these commodities are exported.

The use of chlorothalonil in pulses and peas has implications for the livestock industry, as the grain as well as forage and fodder from these crops will be used as animal feeds. The feeding of forage and fodder treated with chlorothalonil to livestock may produce residues in animal commodities that are exported.

2. Destination and Value of Exports

A summary of the production and exports of pulses in Australia is given below. Details of the export destinations of these commodities were not available.

Table 1. Australian pulse production and exports[1]

Commodity	**1999-00**	**2000-01**	**2001-02**	**2002-03**	**2003-04**
Lupins					
Total production (kt)	1,968.0	1,055.0	1,215.0	716.0	953.1
Exports (kt)	1439.3	714.4	414.2	199.4	430.4
Export value ($m)	234.9	165.9	108.9	57.2	129.1
Field Pea					
Total production (kt)	357.3	456.0	512.0	178.0	407.3
Exports (kt)*	307.3	387.0	459.1	107.6	209.3
Export value ($m)	89.8	111.7	156.9	43.0	55.6
Chick Peas					

[1] Australian Commodity Statistics 2004. Australian Bureau of Agricultural resource Economics.

Total production (kt)	229.9	162.4	258.0	136.0	178.0
Exports (kt)	217.5	217.8	278	88.5	163.8
Export value ($m)	100.8	112.6	166.9	52.4	70.6
Total legumes#					
Total production (kt)	2,876.2	2,078.3	2,408.0	1,220.1	1,915.5
Exports (kt)	2334.2	1,760.8	1,720.2	731.9	1,180.9
Export value ($m)†	601.3	636.1	728.0	290.6	421.6

*. Includes only field pea and cow peas
#. Lupins, field peas, chickpeas, faba beans, navy beans, vetch and lentils
†. Also includes cowpeas, lentils, pigeon peas and some other minor legumes.

The forage and fodder of pulses is likely to be used as stockfeed. The feeding of forage and fodder from treated crops has the potential to produce residues in livestock commodities, namely meat and milk.

A summary of animal commodity exports is given below.

Table 2. Australian animal commodity exports[2]

Commodity	Country	Unit	1999	2000	2001	2002	2003
Beef and veal	Canada	kt	43.3	41.5	50.9	82.9	29.0
		$m	128.0	148.1	204.4	320.2	110.9
	United States	kt	291.1	352.3	397.7	385.9	367.9
		$m	805.1	1 172.8	1 699.7	1 593.6	1 332.3
	Chinese Taipei	kt	34.7	28.6	29.1	34.4	31.1
		$m	123.2	116.7	132.6	152.3	126.7
	Hong Kong, China	kt	3.2	3.6	3.1	2.9	2.1
		$m	16.6	18.2	17.8	17.1	15.0
	Indonesia	kt	11.6	13.1	9.6	14.6	13.0
		$m	33.3	40.8	37.2	46.1	38.4
	Japan	kt	313.3	325.7	319.1	237.0	279.3
		$m	1 369.7	1 537.3	1 728.2	1 237.7	1 384.4
	Korea, Rep. of	kt	77.9	73.3	56.8	80.2	62.3
		$m	201.9	221.7	228.9	320.4	250.7
	Malaysia–Singapore	kt	10.6	9.4	8.8	11.3	10.2
		$m	68.7	70.6	78.7	91.4	86.8
	Philippines	kt	20.4	14.3	19.7	12.9	8.6
		$m	38.5	34.3	55.8	36.1	23.0
	European Union	kt	8.9	5.6	6.5	6.5	5.5
		$m	61.3	37.4	48.4	53.5	49.2
	CIS	kt	8.4	1.4	5.3	1.4	0.3
		$m	18.1	3.8	14.4	2.9	0.7
	Eastern Europe	kt	2.5	2.1	0.4	3.0	1.4
		$m	6.9	6.3	1.2	9.1	4.5
	Kuwait	kt	0.5	0.1	1.1	0.4	2.5
		$m	1.6	0.4	4.7	1.6	9.8
	Saudi Arabia	kt	1.0	0.5	5.0	2.3	1.8
		$m	3.3	2.1	23.0	11.6	7.8
	United Arab Emirates	kt	0.6	0.9	2.0	1.7	1.1
		$m	2.7	4.3	11.9	10.9	7.8
	New Zealand	kt	1.6	3.1	1.4	6.8	3.5
		$m	5.0	11.1	6.3	25.6	15.9
	Pacific Isles	kt	2.1	2.3	2.5	2.7	2.1
		$m	4.1	5.2	7.2	7.4	5.4
	Papua New Guinea	kt	8.2	7.1	4.8	4.3	2.3
		$m	14.1	14.1	11.5	9.8	4.9
	Total beef and veal	**kt**	**868.0**	**901.6**	**946.6**	**920.4**	**840.9**
		$m	**2 963.3**	**3 464.1**	**4 357.3**	**4 002.6**	**3 475.3**
Mutton	Canada	kt	1.6	2.2	2.4	1.5	1.1
		$m	3.1	4.6	6.8	5.2	3.6
	Chinese Taipei	kt	12.0	11.6	12.1	14.7	10.2
		$m	27.6	26.3	36.9	48.9	32.2
	CIS	kt	0.6	1.6	1.6	2.3	0.5
		$m	0.9	3.1	3.7	5.4	1.3

[2] Australian Commodity Statistics 2004. Australian Bureau of Agricultural Resource Economics.

	European Union	kt	7.9	8.2	7.4	8.5	5.2
		$m	27.8	33.5	41.4	41.1	27.4
	Japan	kt	10.9	11.1	10.4	10.4	6.6
		$m	32.6	34.0	42.7	51.1	29.9
	Korea, Rep. of	kt	1.4	1.0	1.0	1.2	0.8
		$m	2.1	1.7	2.3	3.3	2.2
	Malaysia	kt	7.2	7.7	7.3	7.1	5.2
		$m	13.7	16.5	21.7	22.9	15.9
	Papua New Guinea	kt	7.6	6.4	5.5	5.5	4.6
		$m	7.5	6.2	7.4	6.6	6.1
	Saudi Arabia	kt	19.9	20.9	29.8	24.5	22.5
		$m	36.8	43.9	90.1	77.5	65.0
	Singapore	kt	7.8	7.6	7.6	6.6	6.2
		$m	16.5	18.4	23.4	23.2	20.4
	South Africa	kt	30.6	38.4	24.7	15.7	9.3
		$m	35.3	46.3	30.9	17.6	11.1
	United States	kt	17.7	21.5	18.8	20.9	20.1
		$m	37.1	43.9	56.4	64.7	67.9
	Other	kt	46.4	48.0	55.7	54.1	31.8
		$m	84.6	97.8	146.8	152.2	92.4
	Total Mutton	**kt**	**171.7**	**186.2**	**184.2**	**172.7**	**124.1**
		$m	**325.8**	**376.3**	**510.6**	**519.7**	**375.3**
Lamb	European Union	kt	11.4	13.5	13.3	13.4	15.7
		$m	49.4	69.8	99.9	85.7	94.2
	Japan	kt	4.6	5.1	6.1	5.8	6.0
		$m	25.1	30.7	37.0	40.7	42.3
	Papua New Guinea	kt	11.3	14.8	11.9	10.0	9.6
		$m	13.0	16.0	18.0	15.7	14.4
	South Africa	kt	7.2	11.1	3.6	1.3	1.6
		$m	10.0	15.3	5.5	1.2	2.1
	United Arab Emirate	kt	6.1	7.2	7.2	8.4	7.1
		$m	18.2	24.2	27.4	31.6	29.9
	United States	kt	15.8	20.9	28.4	28.8	31.0
		$m	103.2	150.2	219.9	218.2	257.5
	Other	kt	29.0	41.3	43.1	40.5	38.7
		$m	99.1	141.6	171.5	173.2	162.4
	Total Lamb	**kt**	**85.4**	**113.9**	**113.6**	**108.2**	**109.6**
		$m	**318.0**	**447.7**	**579.1**	**566.2**	**602.8**

Table 3. Australian exports of dairy products [3].

Commodity	Country	Unit	2001-02	2002-03	2003-04
Cheese	Japan	kt	103.2	73.2	92.4
		$m	429.2	272.0	299.6
	Philippines	kt	5.2	4.9	3.7
		$m	20.0	15.7	11.1
	Saudi Arabia	kt	17.4	14.8	14.9
		$m	148.2	98.9	69.0
	United Kingdom	kt	4.3	4.3	4.9
		$m	21.5	15.2	18.3
	United States	kt	10.8	9.0	10.3
		$m	48.3	36.1	33.9
	Other	kt	77.1	101.9	85.7
		$m	366.3	361.9	306.6
	Total	kt	218.1	208.1	211.9
		$m	1033.4	799.8	738.4
Butter & Butterfat	Egypt	kt	10.7	10.0	3.3
		$m	2.3.5	18.9	6.4
	Malaysia	kt	4.7	4.3	4.2
		$m	14.4	12.7	13.5
	Philippines	kt	2.0	1.8	0.8
		$m	5.1	3.7	1.9
	Singapore	kt	7.2	6.0	6.5
		$m	20.4	15.5	18.2
	Thailand	kt	7.9	6.2	5.2
		$m	23.0	13.2	12.7
	Other	kt	72.0	66.9	54.4
		$m	211.0	160.0	129.4
	Total	kt	107.5	99.5	76.1

[3] Australian Commodity Statistics 2004. Australian Bureau of Agricultural Resource Economics.

		$m	297.4	22.4	182.1
Skim milk powder	Japan	kt	18.3	16.4	7.6
		$m	53.7	29.6	13.3
	Malaysia	kt	25.3	22.9	22.1
		$m	88.4	51.4	52.7
	Philippines	kt	41.4	29.8	24.2
		$m	143.5	69.0	59.8
	Singapore	kt	16.4	17.8	17.0
		$m	52.8	38.4	41.3
	Thailand	kt	21.8	14.9	7.9
		$m	69.1	33.2	20.0
	Other	kt	87.0	79.2	76.3
		$m	290.5	184.1	198.8
	Total	kt	210.2	180.9	155.0
		$m	697.9	405.6	386.0
Casein	Japan	kt	1.2	0.9	1.1
		$m	14.4	6.4	7.1
	United States	kt	6.5	4.8	3.9
		$m	56.0	27.0	24.0
	Other	kt	0.8	1.8	2.9
		$m	6.5	9.4	17.3
	Total	kt	8.5	7.6	7.8
		$m	76.8	42.8	48.4
Whole milk powder	Malaysia	kt	10.3	6.8	11.1
		$m	39.2	22.3	28.9
	Singapore	kt	9.8	12.3	8.8
		$m	29.7	25.2	21.4
	Taiwan	kt	-	-	-
		$m	54.1	449.9	40.0
	Thailand	kt	6.4	5.8	4.8
		$m	22.6	14.0	12.0
	Other	kt	125.6	103.5	80.6
		$m	425.5	273.4	218.9
	Total	kt	165.3	141.7	116.8
		$m	571.1	379.8	321.1
Other products	Fresh milk	ML	86.9	88.3	85.7
		$m	98.1	98.1	104.0
	Other fresh products	ML	1.4	1.5	2.5
		$m	7.9	5.5	9.6
	Condensed milk	kt	71.5	102.3	100.2
		$m	123.7	133.3	121.0
	Other powder	kt	67.3	75.2	69.4
		$m	275.1	274.9	250
	Total	kt	-	-	-
		$m	504.8	511.9	484.7

3. Proposed use pattern

The proposed use pattern for chlorothalonil in Crop Care Barrack 720 Fungicide is presented below:

Crop	Disease	State	Rate	WHP	Critical Comments
Beans - Broad (Faba)	Chocolate spot (*Botrytis fabae*) Rust (*Uromyces viciae-fabae)*	All States	1.4 - 2.3L/ha	14 days Harvest and Grazing	Make the first application as soon as conditions favour the development of the disease. Repeat at 7 - 14 day intervals. Use the higher rate if the crop is dense and disease pressure is high.
Chickpeas	Ascochyta blight (*Ascochyta rabeie*)	Qld, NSW, Vic,	1.0 - 2.0L/ha	14 days Harvest and	Apply in a minimum total water volume of 100L/ha for ground application and 30 L/ha for aerial application. Use the lower application rate in the following

Lentils	Ascochyta blight *(Ascochyta lentis)* Grey mould (*Botrytis cinerea, Botrytis fabae)*	SA & WA only		Grazing	circumstances : 1. At the early stage of crop growth when there is less vegetation to cover and band spraying is possible. 2. In low disease pressure situations, where there is no history of Ascochyta infection in the paddock or adjacent paddocks and/or seasonal conditions are dry. 3. Where a strict 2 week spray interval is practiced in higher disease pressure situations. Use the higher application rate in the following circumstances : 1. In high disease pressure situations, where there is an existing infection or infected stubble is present in the paddock or adjacent paddocks and regular rainfall events are occurring. 2. On highly susceptible varieties, especially where the application interval has extended beyond 2 weeks. Commence application at 3 to 5 weeks after emergence in chickpeas and 8 to 10 weeks after emergence in lentils and make following applications at 2 to 4 week intervals depending on disease presence or prior to rainfall events. Use the shorter spray interval when : 1. In high disease pressure situations (infection present and regular rainfall events) or 2. Highly susceptible varieties are being grown. The longer spray interval may be used when : 1. No rain has occurred since the last application or 2. Where the higher application rate has been used in the previous application and where the variety has low to moderate susceptibility to Ascochyta or Grey Mould infection. If applying prior to rainfall events : 1. Reapply if 2 or more weeks have elapsed since the last application. 2. Apply Barrack at 1L/ha if less than 4 weeks have elapsed since the last application and the variety being grown has low to moderate susceptibility to Ascochyta Blight or Grey Mould or there is no infection in the crop. 3. Apply Barrack at 2 L/ha if 4 or more weeks have elapsed since the last application and a highly susceptible variety is being grown or infection is present in the crop. If Grey Mould is the predominant disease in lentils and infection pressure is high on a susceptible variety, tank mix or alternate Barrack 720 with a Botrytis specific fungicide such as carbendazim, at critical times such as mid flowering to mid pod fill.
Peas (Processing)	Downy mildew (*Peronospora viciae)* Ascochyta Rot Disease Complex (*Ascochyta pisi, Mycosphaerella pinodes* and *Phoma pinodella)*	Qld, WA, NT & Tas. only	1.1 - 1.8L/ha	14 days Harvest and Grazing	Make the first application as soon as conditions favour the development of the disease. Repeat at 7 - 14 day intervals. Use the higher rate if the crop is dense and disease pressure is high. Apply in a protective program commencing at 5 to 6 weeks after sowing in crops with moderate to high risk of infection. Apply two to four applications at 10 to 14 day intervals to provide ongoing suppression of the disease. Use the higher rate if the crop is dense and disease pressure is high.

WITHHOLDING PERIODS:

HARVEST

Beans, Chickpeas, Lentils, Peas: DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.

GRAZING

Beans, Chickpeas, Lentils, Peas : DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 14 DAYS AFTER APPLICATION.

DO NOT graze or feed treated forage/fodder to livestock producing milk for human consumption.

LIVESTOCK DESTINED FOR EXPORT MARKETS

The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the Export Slaughter Interval is observed before stock are sold or slaughtered.

Export Slaughter Interval (ESI) – 35 days

Livestock that have been grazing on, or fed treated crops should be placed on clean feed for 35 days (5 weeks) prior to export slaughter.

4. Overseas Registration & Use Pattern

Chlorothalonil has been used as a fungicide since the late 1960's and is used extensively world wide in a range of horticultural and agricultural crops. The applicant has indicated that chlorothalonil is registered in over 80 countries including Canada, the USA, South Africa and throughout the EU.

5. Relevant 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. Chlorothalonil has been considered by Codex, however MRLs have not been established in commodities relevant to this application. The following Codex CXLs relevant to Australian uses have been established for chlorothalonil:

Country/status	Commodity	Tolerance, mg/kg	Residue definition
Code CXL	VD 0071 Beans (dry)	0.2	Chlorothalonil

The following overseas residue MRLs/ tolerances have been established:

Country	Commodity	Tolerance, mg/kg	Residue definition
Japan[4]	Peas	0.2	Chlorothalonil
	Broad Beans	0.2	
	Other legumes/pulses	0.2	
	Cattle, muscle	0.02	
	Other terrestrial mammals, muscle	0.02	
	Cattle, fat	0.1	
	Other terrestrial mammals, fat	0.1	
	Cattle, liver	0.03	
	Other terrestrial mammals, liver	0.03	
	Cattle, kidney	0.3	
	Other terrestrial mammals, kidney	0.3	
	Cattle, edible offal	0.03	
	Other terrestrial mammals, offal	0.03	
	Milk	0.06	
	Chicken, muscle	0.01	
	Other poultry, muscle	0.01	
	Chicken, fat	0.01	
	Other poultry, fat	0.01	
	Chicken, liver	0.01	
	Other poultry, liver	0.01	
	Chicken, kidney	0.01	

[4] Provisional MRL list http://www.mhlw.go.jp/english/topics/foodsafety/positivelist060228/dl/r03.pdf

	Other poultry, kidney	0.01	
	Chicken, edible offal	0.01	
	Other poultry, edible offal	0.01	
	Chicken, eggs	0.01	
	Other poultry, eggs	0.01	
US[5]	Bean (dry)	0.1	Chlorothalonil (tetrachloroisophthalonitrile) and its metabolite 4-hydroxy-2,5,6-trichloroisophthalonitrile in or on commodities
	Cattle, fat	0.1	4-hydroxy-2,5,6-trichloroisophthalonitrile
	Cattle, kidney	0.5	
	Cattle, meat by-products, except kidney	0.05	
	Cattle, meat	0.03	
	Milk	0.1	
	Sheep, fat	0.1	
	Sheep, kidney	0.5	
	Sheep, meat by-products, except kidney	0.05	
	Sheep, meat	0.03	
EU[6]	Pulses beans	0.01	Chlorothalonil
	Pulses lentils	0.01	
	Pulses peas	0.01	
	Pulses others	0.01	
	Meat, bovine	0.01	Chlorothalonil
	Meat, bovine, frozen	0.01	
	Meat, swine	0.01	
	Meat, sheep or goats	0.01	
	Meat, horses, asses, mules	0.01	
	Edible offal, bovines, swine, sheep, goats,	0.01	
	Fat pig & poultry	0.01	
	Dairy, milk & cream	0.01	
	Dairy butter, other fats, oils.	0.01	
	Dairy, cheese & curd	0.01	
	Egg in shell	0.01	
	Egg, not in shell & yolks	0.01	
	Meat, offal & blood, sausage & similar	0.01	
	Meat, offal & blood, meat offal or blood(others)	0.01	
	Meat & edible offal, poultry of heading	0.01	
	Meat & edible offal edible flours & meals	0.01	
	Meat & edible offal, other	0.01	

In the EU, it has been proposed that the residues definition be revised from parent chlorothalonil to the metabolite 4-hydroxy-2,5,6-trichloroisophthalonitrile for animal tissues. The following MRLs have been proposed:

Country	Commodity	Tolerance, mg/kg	Residue definition
EU	Fat	0.1	4-hydroxy-2,5,6-trichloroisophthalonitrile
	Muscle	0.02	
	Liver	0.05	
	Kidney	0.3	
	Milk	0.1	
	Eggs	0.01	

[5] Electronic Code of Federal Regulations. Title 40: Protection of Environment PART 180—TOLERANCES AND EXEMPTIONS FROM TOLERANCES FOR PESTICIDE CHEMICALS IN FOOD. Subpart C—Specific Tolerances. 180.275 Chlorothalonil; tolerances for residues

[6] http://europa.eu.int/comm/food/plant/protection/resources/mrl_pesticide.pdf

6. Current and Proposed Australian MRLs for chlorothalonil

Pulse Grain

Overseas trials in chickpeas and faba beans were provided in support of this application. The highest residues in grain were 2.4 mg/kg for faba beans and 0.62 mg/kg in chickpeas 14 Days After Last Treatment (DALT), following 2-3 applications of chlorothalonil at the proposed application rate. These data indicated there was some carry over of residues in the grain between applications applied at 10-14 days intervals; however it is the final application that accounted for the majority of residue present at harvest.

In the Australian trials, the residues in chickpea and lentil grain were less than the Limit of Quantitation (<LOQ) in grains, 14 Days After Treatment (DAT) following a single application of chlorothalonil at ~1x the maximum application rate for pulses.

Given chlorothalonil residues in broad beans, chickpeas and lentils are expected to be <3 mg/kg, it is recommended that the existing Temporary MRL (TMRL) for VD 0070 Pulses of 7 mg/kg be replaced with an MRL of 3 mg/kg for VD 0070 Pulses.

Pulse forage

In the overseas trials, faba beans and chickpeas were treated with 2-3 applications of chlorothalonil at the proposed application rate. The highest chlorothalonil residues in faba bean forage were 88 mg/kg 7 DALT and 65 mg/kg 14 DALT. The highest residues in chickpea forage were 89 mg/kg 7 DALT and 59 mg/kg 14 DALT.

Australian residues data were available for the forage and fodder of broad beans, chickpeas and lentils. Crops were treated with up to 5 applications of chlorothalonil at 0.5-0.6x the maximum rate, followed by a single application at 0.87-1.2x the maximum rate. The highest residues in forage were 24, 30 and 36 mg/kg respectively 14 DALT.

Existing label directions for faba bean allow a re-treatment interval of 7-14 days. A re-treatment at 7-day intervals is a worst-case situation from a residues perspective. It is unlikely that this treatment regime would be maintained throughout the season, particularly toward crop maturity when the crop is drying off. That being the case, where three successive applications are made at 7-day intervals, it is expected that residues from the first treatment will be negligible by the time of the third application. If it is then assumed that each successive application contributes 100 ppm to the total residue (7 DALT), chlorothalonil residues in faba bean are not expected to exceed 250 mg/kg at 14 DALT.

As there are several pulse uses on the label, it is appropriate to set a group MRL, despite the anticipated difference in residues between chickpeas/lentils and faba beans. It is recommended that the existing TMRL of 100 mg/kg for Pulses, forage and fodder be replaced with an MRL of 250 mg/kg.

The proposed 14 days WHP for grazing and /or cutting for stockfood is acceptable.

Pea forage and fodder

No changes to the use pattern on processing peas, other than the removal of the existing grazing restraint was requested, hence the existing MRL of 10 mg/kg for VP 0063 (pods and succulent = immature seeds) remains appropriate.

The residues data for peas that are representative of GAP are based on 4 applications of chlorothalonil, applied at the maximum rate, at the minimum recommended application interval.

Where peas are harvested 14 DALT residues in the fodder were 56.62, 114.16, 135.44 and 218.56 mg/kg. The recommended MRL for chlorothalonil in pea forage is 250 mg/kg, set in conjunction with a grazing WHP of 14 days.

Animal commodity MRLs

No MRLs for chlorothalonil in animal commodities were previously established, and restraints on the current Crop Care Barrack 720 Fungicide label prohibit the grazing or feeding of treated forage and fodder.

The available metabolism studies in goats indicate that chlorothalonil is rapidly metabolised to 2,5,6-trichloro-4-hydroxyisophthalonitrile; and that significant residues of parent compound and other metabolites were not expected. The available metabolism data support a residue definition for chlorothalonil of "4-hydroxy-2,5,6-trichloroisophthalonitrile metabolite, expressed as chlorothalonil" in animal commodities.

The forage and fodder of pulse and pea crops are valuable feed commodities, and it is assumed that these commodities may comprise up to 100% of the diet of cattle and sheep[7]. Grain from pulses treated with chlorothalonil may also be used as stockfeed. The estimated exposure of livestock including poultry from the consumption of treated forage/fodder and grain are detailed below.

Cattle (500 kg bw, 20 kg dry matter (DM)/day)

Feed group	Commodity	% in diet	Feed intake	Residue, mg/kg	% DM	Livestock dietary exposure	
						mg/animal	mg/kg bw
Pulses/legumes	Chickpeas, faba beans, lentils.	100	20	2.4*	100	48	0.096
Forage/Fodder of pulse and legume crops	Chickpeas, faba beans, lentils.	100	20	250	100	5000	10.0
Forage/Fodder of pulse and legume crops	Pea hay/fodder	100	20	219*	100	4380	8.76
Maximum Feeding Level					**100**	**5000**	**10.0**

*based on highest residue rather than the MRL

The available animal transfer data were sufficient to recommend MRLs of 3 mg/kg for MM 0095 Meat (mammalian) [in the fat] and 5 mg/kg for MM 0812 Cattle, edible offal of.

Animal transfer data indicate an MRL of 1 mg/kg for ML 1060 milks would be appropriate. However at this level, chlorothalonil residues in milk would result in chronic dietary exposure above the ADI. Therefore the following grazing restraint must be included on the label **"DO NOT graze or feed treated forage/fodder to livestock producing milk for human consumption".**

Where cattle are fed grain at up to 100% of the diet, the potential exists for detectable residues in milk. Based on the STMR for chlorothalonil and the 2,5,6-trichloro-4-hydroxyisophthalonitrile in grain, residues in milk are unlikely to exceed 0.05 mg/kg as a result of feeding of grain. The chronic dietary exposure is acceptable when the milk MRL is 0.05 mg/kg.

[7] APVMA StockFeed Guideline Document 1 – Primary Animal Feed Commodities as a Proportion of Livestock Diets.

Residues of 2,5,6-trichloro-4-hydroxyisophthalonitrile in animal commodities have the potential to prejudice trade in countries where tolerances have not been established. Animal depuration data that allow an Export Slaughter Interval to be recommended were provided. The ESI is based on the depuration of residues from muscle/fat, rather than depuration in offal.

Export Slaughter Interval (ESI) – 35 days
Livestock that have been grazing on, or fed treated crops should be placed on clean feed for 35 days (5 weeks) prior to export slaughter.

Poultry (2 kg bw, 150 g DM/day)

Feed group	Commodity	% in diet	Feed intake (g)	Residue, mg/kg	% DM	Livestock dietary exposure	
						mg/animal	mg/kg bw
Pulses/legumes	Chickpeas, faba beans, lentils.	100	150	3	100	0.45	0.225
Maximum Feeding Level					**100**	**0.45**	**0.225**

Transfer studies for chlorothalonil and the 4-hydroxy-2,5,6-trichloroisophthalonitrile metabolite were available for poultry at feeding levels that approximated those expected in the diet. The available data were sufficient to recommend MRLs for poultry and eggs be set at the LOQ (0.05 mg/kg).

The following new MRLs and residue definition have been recommended in relation to this application (Tables 1, 3 and 4 refer to the respective Tables in the MRL Standard).

Table 1

Compound	Food		MRL (mg/kg)
Chlorothalonil	VD 0070	Pulses	3
	ML 0106	Milks	*0.05
	MM 0095	Meat (mammalian)[in the fat]	3
	MO 0105	Edible Offal (mammalian)	5
	PE 0112	Eggs	*0.05
	PO 0111	Poultry, edible offal of	*0.05
	PM 0110	Poultry meat	*0.05

Table 3

Compound	Residue
Chlorothalonil	Commodities of plant origin; chlorothalonil Commodities of animal origin: 4-hydroxy-2,5,6-trichloroisophthalonitrile metabolite, expressed as chlorothalonil.

Table 4

Compound	Animal feed commodity		MRL (mg/kg)
Chlorothalonil		Pulses, forage and fodder	250
	AL 0072	Pea hay or pea fodder (dry)	250

For full details of chlorothalonil MRLs, please refer to the APVMA website http://www.apvma.gov.au and follow the Residues link.

7. Potential Prejudice to Trade

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

Grain pulses are regarded as a major export commodity. Based on the use pattern proposed, it is anticipated that residues of up to 3 mg/kg may be present in the grain. Details of the export destination of pulses is limited, hence it is not possible to determine if the importing countries have established tolerances for chlorothalonil. It is noted that a TMRL for chlorothalonil of 7 mg/kg has been in place since 1999 to cover use in grain pulses under permit. It is considered that setting a permanent MRL of 3 mg/kg should present no additional risk to the previous use under permit however industry input is sought in relation to this aspect.

No changes to the MRL for VP 0063 Peas has been proposed.

It is anticipated that the forage and fodder of pea and pulse crops will be fed to livestock. The US and Japan are two of the largest export markets for Australian beef and veal. Animal commodity MRLs have been established in Japan and the US, however the MRLs are considerably lower than the Australian MRLs.

Animal transfer and depuration data were available to recommend an Export Slaughter Interval (ESI) of 35 days. The data indicate that following a period of grazing treated forage and fodder containing chlorothalonil residues of up to 250 mg/kg, and up to 2 mg/kg 2,5,6-trichloro-4-hydroxyisophthalonitrile, a depuration period of 35 days on clean feed will be sufficient to allow residues to decline to less than the Limit of Quantitation (<LOQ) in meat and fat. Where residues are <LOQ, the risk to trade is considered to be small.

It is recommended the following Export Slaughter Interval (ESI) statement be included on the label to mitigate the potential risk to trade that the use of chlorothalonil poses:

> **Export Slaughter Interval (ESI) – 35 days**
> **Livestock that have been grazing on, or fed treated crops should be placed on clean feed for 35 days (5 weeks) prior to export slaughter.**

It is anticipated that pulse grains will be fed to cattle. Where grains comprise 100% of the diet of cattle, residues in meat fat are not expected to exceed the LOQ (0.05 mg/kg).

The following restraint is recommended for the feeding of forage and fodder to lactating dairy cattle; **"DO NOT graze or feed treated forage/fodder to livestock producing milk for human consumption".** Dairy cattle may be exposed to chlorothalonil through the consumption of treated grains. Residues in milk are not expected to exceed the LOQ (0.05 mg/kg).

It has been determined that neither residues of chlorothalonil nor 2,5,6-trichloro-4-hydroxyisophthalonitrile will be present at detectable levels in poultry eggs or tissues. Therefore the proposed use of chlorothalonil is unlikely to unduly prejudice trade in these commodities.

8. Conclusions

The above discussion highlights the proposed changes to the label of the registered product Crop Care Barrack 720 Fungicide and the necessary amendments to the MRL Standard.

The APVMA is seeking comments on the potential for Crop Care Barrack 720 Fungicide to unduly prejudice Australian export trade, particularly in relation to trade in pulse grains, when the product is used as directed.