Trade Advice Notice

on

Epoxiconazole and Pyraclostrobin

in the product

Opera Fungicide
[APVMA product number 62753]

Date: February 2009

About this document

This is a Trade Advice Notice.

It indicates that the Australian Pesticides and Veterinary Medicines Authority (APVMA) is considering an application for registration of an 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 notice.

The APVMA will only consider comment on submissions that relate to the **trade implications** of the extended use of the product. Comments received outside these grounds will not be considered by the APVMA. Comments made on appropriate grounds will be considered with details posted on the APVMA website noting what action has/will be taken in regard to concerns.

Any advice the APVMA receives through this consultation which it relies on to grant this application will be noted in a subsequent Advice Summary.

Advice Summaries can be found at:
http://www.apvma.gov.au/registration/data_requirements_subpage.shtml

Prior to Submission

Please note that subject to the *Freedom of Information Act 1982*, the *Privacy Act 1988* and the Agvet Codes all submissions received may be made publicly available. They may be listed or referred to in any papers or reports prepared on this subject matter.

The APVMA reserves the right to reveal the identity of a respondent (you) unless a request for anonymity accompanies your submission. If no request for anonymity is made, you will be taken to have consented to the disclosure of your identity for the purposes of Information Privacy Principle 11 of the *Privacy Act 1988.*

The contents of any submission will not be treated as confidential or confidential commercial information unless they are marked as such and you have provided justification such that the material is capable of being classified as confidential or confidential commercial information in accordance with the *Freedom of Information Act 1982* or the Agvet Codes as the case may be.

About this consultation

The APVMA invites comment on this Trade Advice Notice until the 20 March 2009. Submissions should be addressed to:

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1. INTRODUCTION

The Australian Pesticides and Veterinary Medicines Authority (APVMA) has before it an application from BASF Australia Ltd for the registration of Opera Fungicide, containing pyraclostrobin and epoxiconazole, for the control of various diseases in wheat, barley and oats.

The proposed Australian use pattern for Opera Fungicide is given below:

Opera Fungicide (85 g/L pyraclostrobin, 62.5 g/L epoxiconazole)

Restraint:
DO NOT apply more than two applications of Opera (or any other strobilurin or Group K fungicide) in any one season on the same paddock)

Crop	Pest	Rate per ha	Critical Comments
Wheat	Leaf rust (*Puccinia recondite*)	500 to 1000 mL (42.5 to 85 g pyraclostrobin, 31.2 to 62.5 g epoxiconazole)	Apply when conditions favour disease development and preferably prior to development of high levels of disease in the crop. Aim to apply between stem elongation and completion of flag leaf emergence (ZGS 32 – 41) if disease is present or conditions favour disease development. Apply at the higher rate when disease pressure is high. DO NOT apply later than ZGS 59 as yield responses are unlikely.
	Stripe rust (*Puccinia striiformis*) Stem rust (*Puccinia graminis f. sp. Tritici*) Septoria nodorum blotch (*Phaeosphaeria nodorum*)	500 mL (42.5 g pyraclostrobin, 31.2 g epoxiconazole)	Apply when conditions favour disease development and preferably prior to development of high levels of disease in the crop. Aim to apply between stem elongation and completion of flag leaf emergence (ZGS 32 – 41) if disease is present or conditions favour disease development. Repeat spraying may be required, particularly if infection occurs early. Regularly monitor the crop from 3-4 weeks after the first application for signs of re-infection. DO NOT apply later than ZGS 59 as yield responses are unlikely.
	Powdery mildew (*Blumeria graminis f. sp. Tritici*)	500 mL (42.5 g pyraclostrobin, 31.2 g epoxiconazole)	Apply when conditions favour disease development and preferably prior to development of high levels of disease in the crop. Aim to apply between stem elongation and completion of flag leaf emergence (ZGS 32 – 41) if disease is present or conditions favour disease development. Repeat spraying may be required, particularly if infection pressure persists. Regularly monitor the crop from 3 – 4 weeks after the first application for signs of re-infection. DO NOT apply later than ZGS 59 as yield responses are unlikely.

Barley	Leaf rust (*Puccinia hordei*)	500 mL (42.5 g pyraclostrobin, 31.2 g epoxiconazole)	Apply when conditions favour disease development and preferably prior to development of high levels of disease in the crop. Aim to apply between stem elongation and completion of flag leaf emergence (ZGS 32 – 41) if disease is present or conditions favour disease development. DO NOT apply later than ZGS 59 as yield responses are unlikely.
	Spot form of net blotch (*Pyrenophora teres f. sp. Maculate*) Net form of net blotch (*Pyrenophora teres f. sp.teres*)	500 to 1000 mL (42.5 to 85 g pyraclostrobin, 31.2 to 62.5 g epoxiconazole)	Apply when conditions favour disease development and preferably prior to development of high levels of disease in the crop. Aim to apply between stem elongation and completion of flag leaf emergence (ZGS 32 – 41) if disease is present or conditions favour disease development. Use the higher rate when disease pressure is high. DO NOT apply later than ZGS 59 as yield responses are unlikely.
	Leaf scald (*Rynchosporium secalis*)	500 mL (42.5 g pyraclostrobin, 31.2 g epoxiconazole)	Apply when conditions favour disease development and preferably prior to development of high levels of disease in the crop. Aim to apply between stem elongation and completion of flag leaf emergence (ZGS 32 – 41) if disease is present or conditions favour disease development. Repeat spraying may be required, particularly if infection pressure persists. Regularly monitor the crop from 3-4 weeks after the first application for signs of re-infection. DO NOT apply later than ZGS 59 as yield responses are unlikely.
	Powdery mildew (*Blumeria graminis f. sp. Hordei*)	500 to 1000 mL (42.5 to 85 g pyraclostrobin, 31.2 to 62.5 g epoxiconazole)	Apply when conditions favour disease development and preferably prior to development of high levels of disease in the crop. Aim to apply between stem elongation and completion of flag leaf emergence (ZGS 32 – 41) if disease is present or conditions favour disease development. Use the higher rate when disease pressure is high. Repeat spraying may be required, particularly if the low rate is used and infection pressure persists. Regularly monitor the crop from 3-4 weeks after the first application for signs of re-infection. DO NOT apply later than ZGS 59 as yield responses are unlikely.
Oats and oaten hay	Septoria leaf blotch (*Phaeosphaeria avenaria*)	500 mL (42.5 g pyraclostrobin, 31.2 g epoxiconazole)	Apply when conditions favour disease development and preferably prior to development of high levels of disease in the crop. Aim to apply between stem elongation and completion of flag leaf emergence (ZGS 32 – 41) if disease is present or conditions favour disease development. Repeat spraying may be required, particularly if infection occurs early. Regularly monitor the crop from 3-4 weeks after the first application for signs of re-infection. DO NOT apply later than ZGS 59 as yield

			responses are unlikely

Withholding periods:
Harvest: Not required when used as directed.
Grazing: Do not graze or cut for stock food for 3 weeks after application.

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)
AFTER OBSERVING THE WITHHOLDING PERIOD FOR GRAZING OR CUTTING FOR STOCKFOOD, LIVESTOCK THAT HAVE BEEN GRAZED ON OR FED TREATED CROPS SHOULD BE PLACED ON CLEAN FEED FOR 3 DAYS PRIOR TO SLAUGHTER.

(The export slaughter interval is specific to epoxiconazole only).

2. TRADE CONSIDERATIONS

2.1 Commodities Exported

Wheat, barley and oats are considered major export commodities, as is oaten hay. Animal commodities derived from livestock fed on cereal grain, forage and fodder are also major export commodities.

2.2 Destination and Value of Exports

In 2006/07 Australia exported 11,196 kt of wheat and flour valued at $2,765 million.[1] Major export markets are summarised in Table 1.

Table 1: Export markets for Australian wheat and flour in 2006/07

Export market	Quantity (kt)
Indonesia	2 574
India	1 593
Japan	1 114
Korea, Rep. of	989
Malaysia	629
Yemen	385
Iraq	362
New Zealand	350
Egypt	251
Kuwait	250

In 2006/07 Australia exported 3,135 kt of barley valued at $833 million. In the same period Australia exported 62 kt of oats valued at $20 million. Details of export markets for Australian barley are not provided by ABARE. Also the major export market for Australian oats (52 kt) was not listed by ABARE due to confidentiality restrictions.

No information on the export of oaten hay is available. In broad terms, the export marked for Australian hay has grown from 423,000 tonnes in 2001 to a projected 646,000 tonnes in 2006, with the majority going to Japan's dairy industry[2]

The value and destinations of Australian exports of beef, mutton, lamb, and dairy products are summarised in the tables 2 to 4.[1]

[1] Australian Commodity Statistics 2007, ABARE

[2] GRDC - Media Release - Hay making a viable alternative as the sun keeps on shining - Elmore GRDC Update.
http://www.grdc.com.au/director/events/mediareleases.cfm?item_id=4828B9A5C81CD6B3E6B2620345E2AF16&pageNumber=12

Table 2: Export markets for Australian beef.

Value of beef exports	1998	1999	2000	2001	2002	2003	2004	2005	2006
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Beef and veal									
Americas									
Canada	104.6	128.0	148.1	204.4	320.2	110.9	38.1	32.6	43.8
United States	735.2	805.1	1 172.8	1 699.7	1 593.6	1 332.3	1 374.4	1 186.4	1 180.7
Asia									
Chinese Taipei	108.2	123.2	116.7	132.6	152.3	126.7	124.2	148.3	134.6
Hong Kong, China	23.6	16.6	18.2	17.8	17.1	15.0	27.3	18.7	13.5
Indonesia	6.1	33.3	40.8	37.2	46.1	38.4	26.7	33.6	39.0
Japan	1 312.4	1 369.7	1 537.3	1 728.2	1 237.7	1 384.4	2 189.8	2 244.8	2 172.1
Korea, Rep. of	87.6	201.9	221.7	228.9	320.4	250.7	434.4	494.8	734.7
Malaysia–Singapore	66.7	68.7	70.6	78.7	91.4	86.8	74.4	48.9	29.2
Philippines	40.4	38.5	34.3	55.8	36.1	23.0	4.3	5.9	3.7
Europe									
European Union	58.6	61.3	37.4	48.4	53.5	49.2	62.8	56.8	77.2
CIS	58.2	18.1	3.8	14.4	2.9	0.7	2.0	4.6	61.0
Eastern Europe	43.6	6.9	6.3	1.2	9.1	4.5	1.3	0.4	0.4
Middle East									
Kuwait	3.6	1.6	0.3	4.6	1.8	9.8	3.4	1.0	0.9
Saudi Arabia	7.4	3.3	2.1	23.0	11.6	7.8	3.1	1.7	4.5
United Arab Emirates	5.4	2.5	4.4	11.6	10.9	7.8	12.0	13.7	0.3
Oceania									
New Zealand	4.5	5.0	11.1	6.3	25.6	15.9	9.8	8.8	8.0
Pacific Isles	6.2	4.1	5.2	7.2	7.4	5.4	4.5	4.0	6.3
Papua New Guinea	12.3	14.1	14.1	11.5	9.8	4.9	5.2	4.3	5.8
Total beef and veal	2 768.3	2 963.3	3 464.1	4 357.3	4 002.6	3 475.3	4 390.2	4 346.7	4 604.0

Table 3: Export markets for Australian sheep meat.

Value of sheep exports	1998	1999	2000	2001	2002	2003	2004	2005	2006
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Mutton									
Canada	3.2	3.1	4.6	6.8	5.2	3.6	5.8	5.4	7.1
Chinese Taipei	29.1	27.6	26.3	36.9	48.9	32.2	41.9	34.8	29.8
CIS	9.2	0.9	3.1	3.7	5.4	1.3	5.8	13.5	33.1
European Union	44.8	28.2	34.1	42.0	41.4	28.1	43.2	48.3	46.7
Japan	37.9	32.6	34.0	42.7	51.1	29.9	47.1	38.1	31.5
Korea, Rep. of	2.3	2.1	1.7	2.3	3.3	2.2	3.1	3.1	2.9
Malaysia	11.6	13.7	16.5	21.7	22.9	15.9	22.6	18.5	25.1
Papua New Guinea	8.0	7.5	6.2	7.4	6.6	6.1	5.1	5.2	4.2
Saudi Arabia	37.4	36.8	43.9	90.1	77.5	65.0	53.0	63.9	67.3
Singapore	16.4	16.5	18.4	23.4	23.2	20.4	22.0	18.6	19.5
South Africa	34.6	35.3	46.3	30.9	17.6	11.1	14.1	18.7	29.2
United States	40.3	37.1	43.9	56.4	64.7	67.9	48.6	44.4	50.2
Other	77.9	84.2	97.1	146.3	152.0	91.7	113.4	119.7	141.3
Total	352.5	325.8	376.3	510.6	519.7	375.3	425.9	432.0	487.9
Lamb									
European Union b	48.2	52.3	74.3	105.7	89.3	96.9	93.4	83.9	85.6
Japan	22.9	25.1	30.7	37.0	40.7	42.3	53.5	79.1	83.0
Papua New Guinea	12.0	13.0	16.0	18.0	15.7	14.4	17.3	19.4	20.0
South Africa	9.7	10.0	15.3	5.5	1.2	2.1	3.5	5.3	9.0
United Arab Emirates	18.1	18.2	24.2	27.4	31.6	29.9	27.0	32.8	47.1
United States	97.6	103.2	150.2	219.9	218.2	257.5	259.9	324.2	319.0
Other	87.2	96.3	137.0	165.7	169.5	159.7	184.7	233.1	229.4
Total	295.6	318.0	447.7	579.1	566.2	602.8	639.3	777.8	793.2

Table 4: Export markets for Australian dairy products.

Value of dairy exports	Unit	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Cheese								
Japan	$m	338.8	429.2	272.0	299.6	378.9	298.5	337.9
Philippines	$m	18.6	20.0	15.7	11.1	18.2	13.7	13.1
Saudi Arabia	$m	123.6	148.2	98.9	69.0	81.5	103.5	86.7
United Kingdom	$m	38.7	21.5	15.2	18.3	20.5	20.1	14.8
United States	$m	39.1	48.3	36.1	33.9	45.4	54.8	53.1
Other	$m	391.0	366.3	361.9	306.6	330.9	345.5	319.0
Total	$m	949.9	1 033.4	799.8	738.4	875.4	836.1	824.6
Butter and butterfat								
Egypt	$m	34.6	23.5	18.9	6.4	10.5	12.5	13.9
Malaysia	$m	14.7	14.4	12.7	13.5	11.6	15.8	11.0
Philippines	$m	8.6	5.1	3.7	1.9	2.8	5.1	3.2
Singapore	$m	16.7	20.4	15.5	18.2	16.8	21.1	14.4
Thailand	$m	19.8	23.0	13.2	12.7	13.5	12.0	9.8
Other	$m	196.6	211.0	160.0	129.4	133.0	157.6	126.2
Total	$m	291.0	297.4	224.0	182.1	188.3	224.1	178.6
Skim milk powder								
Japan	$m	48.9	53.7	29.6	13.3	10.6	12.5	11.1
Malaysia	$m	87.4	88.4	51.4	52.7	64.2	77.1	72.2
Philippines	$m	181.4	143.5	69.0	59.8	49.4	72.0	46.1
Singapore	$m	51.8	52.8	38.4	41.3	57.7	56.1	67.1
Thailand	$m	67.2	69.1	33.2	20.0	21.7	76.8	51.1
Other	$m	257.5	290.5	184.1	198.8	216.3	234.3	257.3
Total	$m	694.2	697.9	405.6	386.0	419.9	528.9	505.0
Casein								
Japan	$m	19.9	26.7	20.6	23.3	23.1	30.4	31.8
United States	$m	56.7	80.5	81.4	68.8	56.6	27.3	32.4
Other	$m	23.4	15.5	26.4	30.4	36.4	31.3	49.3
Total	$m	100.1	122.6	128.4	122.5	116.1	88.9	113.5
Whole milk powder								
Malaysia	$m	26.9	39.2	22.3	28.9	33.1	23.8	14.5
Singapore	$m	31.7	29.7	25.2	21.4	30.9	44.6	41.4
Taiwan	$m	54.9	54.1	44.9	40.0	31.5	22.8	13.5
Thailand	$m	24.9	22.6	14.0	12.0	8.6	10.5	12.3
Other	$m	441.8	425.5	273.4	218.9	220.3	231.9	193.1
Total	$m	580.2	571.1	379.8	321.1	324.4	333.6	274.9
Other products								
Fresh milk	$m	82.0	98.1	98.1	104.0	108.7	107.3	96.3
Other fresh products	$m	12.7	7.9	5.5	9.6	9.1	6.3	11.8
Condensed milk	$m	111.5	123.7	133.3	121.0	139.8	147.5	156.9
Other powders	$m	223.2	276.6	272.1	253.9	244.9	241.2	211.0
Total	$m	429.4	506.2	509.1	488.6	502.6	502.3	476.0

2.3 Results from residues trials presented to the APVMA

To support their application BASF have supplied details of residue trials conducted on wheat, barley and oats at 4 sites in Australia in 2006. Single treatments of product were applied at Z31 (2nd node), Z39 (full flag leaf emergence) or Z59 (head emergence). Double treatments were made at Z31 and Z39, Z31 and Z59, Z39 and Z59. Crops from each site were also treated 3 times: once at Z31, once at Z39 and once at Z59. Target application rates for each treatment were 62.5 g ai/ha for epoxiconazole and 85 g ai/ha for pyraclostrobin.

Residues of epoxiconazole in wheat, barley and oat grain in the Australian trials at harvest were <0.01 (n = 79), 0.01 (n = 2), 0.02 and 0.15 mg/kg. (Residues were only detected after 3 applications of product when a maximum of 2 are proposed as on label). Based on these results it is recommended that the current epoxiconazole MRLs for barley and wheat at 0.05 mg/kg are replaced with an MRL for GC 0080 Cereal grains, also at 0.05 mg/kg to include use on oats.

Residues of pyraclostrobin in wheat, barley and oat grain from the Australian trials involving up to 3 applications of product were <0.01 mg/kg (n = 28, 27 and 28 respectively). Based on these results it is recommended that an MRL of *0.01 mg/kg be established for pyraclostrobin on GC 0080 Cereal grains.

Residues of epoxiconazole in wheat forage (dry weight) from the Australian trials 21 days after the last of 1 to 3 applications of the product at the proposed rate were 0.76, 0.80 (n = 2), 0.96, 1.05, 1.10, 1.14, 1.18, 1.20, 1.27, 1.29 (n = 2), 1.34, 1.37, 1.45, 1.51, 1.55, 1.60, 1.76, 1.91, 1.98, 2.18, 2.38, 2.73, 2.82, 2.97, 3.10 and 3.45 mg/kg. Similary, epoxiconazole residues in barley forage (dry weight) at 21 days after the last application were 0.43, 0.60, 0.63, 0.83, 0.84, 0.90, 0.95, 1.08, 1.03 (n = 2), 1.12, 1.20, 1.25, 1.37, 1.41 (n = 2), 1.57, 1.62, 1.76, 1.81, 1.90, 1.96, 2.09, 2.42, 2.58, 3.05 and 3.53 mg/kg. Epoxiconazole residues in oat forage (dry weight) at 21 days after the last application were 0.50, 0.51, 0.64, 0.84, 0.86, 0.90, 0.91, 0.94, 0.98, 1.03 (n = 2), 1.06, 1.15, 1.27, 1.33, 1.47, 1.48, 1.59, 1.61, 1.77, 1.80, 1.90, 1.97, 2.05, 2.22, 2.24, 2.27 and 2.84 mg/kg. It is recommended that the Table 4 entries for epoxiconazole in wheat and barley forage, green at 5 mg/kg be replaced with a group MRL of 5 mg/kg for epoxiconazole on cereal forage, green.

Residues of pyraclostrobin in wheat forage (dry weight) 21 days after the last of 1 to 3 applications of product at the proposed rate were 0.39, 0.67 (n = 2), 0.73, 0.76, 0.90, 0.93, 0.97, 0.98, 0.99, 1.00, 1.03 (n = 2), 1.07, 1.11, 1.31, 1.34, 1.38, 1.44, 1.47, 1.48, 1.61, 1.86, 1.95, 1.98, 1.99, 2.02 and 3.26 mg/kg. Similarly, pyraclostrobin residues in barley forage (dry weight) 21 days after the last application were 0.54, 0.56 (n = 2), 0.57, 0.61, 0.62, 0.63, 0.76, 0.77, 0.78, 0.79, 0.82, 0.88, 0.98, 1.03, 1.10 (n = 2), 1.15, 1.17, 1.19, 1.21, 1.28, 1.45, 1.56, 1.72 (n = 2) and 3.08 mg/kg. Pyraclostrobin residues in oat forage (dry weight) 21 days after the last application were 0.42, 0.49, 0.52, 0.62, 0.66, 0.69, 0.72, 0.75, 0.82 (n = 2), 0.95, 0.97, 1.02, 1.04, 1.06, 1.08, 1.10, 1.25, 1.27 (n = 2), 1.28, 1.29 (n = 2), 1.41, 1.47, 1.55 (n = 2) and 1.68 mg/kg. Based on these results a Table 4 entry of 5 mg/kg is recommended for pyraclostrobin on cereal forage in conjunction with a 21 day withholding period for grazing and cutting.

Residues of epoxiconazole in wheat stubble or straw (dry weight) at harvest after 1 to 3 applications of product were 0.04, 0.06 (n = 2), 0.07 (n = 3), 0.08, 0.09, 0.10 (n = 3), 0.12, 0.13 (n = 3), 0.14 (n = 2), 0.15 (n = 3), 0.18, 0.22, 0.25 (n = 2), 0.29, 0.31 and 0.33 mg/kg. Similary, epoxiconazole residues in barley stubble (dry weight) at harvest were 0.02, 0.04 (n = 2), 0.05 (n = 2), 0.06 (n = 2), 0.08, 0.09 (n = 3), 0.10 (n = 2), 0.11 (n = 5), 0.12, 0.13, 0.14, 0.15, 0.17, 0.22, 0.23 and 0.24 (n = 2) mg/kg. Epoxiconazole residues in oat stubble (dry weight) at harvest were 0.03, 0.05 (n = 2), 0.06, 0.07, 0.08, 0.11 (n = 3), 0.12 (n = 4), 0.13 (n = 3), 0.15 (n = 2), 0.17, 0.19, 0.21, 0.22, 0.23 (n = 3), 0.26, 0.29, 0.65 mg/kg. It is recommended that the current Table 4 entries for epoxiconazole on barley and wheat straw and fodder, dry at 7 mg/kg be replaced with an MRL of 7 mg/kg for epoxiconazole on AS 0081 Straw and fodder of cereal grains, dry.

Residues of pyraclostrobin in wheat stubble or straw (dry weight) at harvest after 1 to 3 applications of product were 0.02, 0.03 (n = 3), 0.04 (n = 2), 0.05, 0.06 (n = 6), 0.07 (n = 4), 0.08 (n = 3), 0.09, 0.11, 0.12 (n = 2), 0.14, 0.15, 0.20 and 0.24 mg/kg. Similarly pyraclostrobin residues in barley stubble (dry weight) at harvest were 0.02 (n = 3), 0.03 (n = 2), 0.04 (n = 4), 0.05 (n = 2), 0.06 (n = 2), 0.07 (n = 4), 0.08 (n = 3), 0.09 (n = 2), 0.10, 0.11, 0.16 (n = 2), 0.20 mg/kg. Pyraclostrobin residues in oat stubble (dry weight) at harvest were 0.02, 0.03, 0.04 (n = 4), 0.06 (n = 2), 0.07 (n = 4), 0.08 (n = 3), 0.10 (n = 2), 0.11 (n = 2), 0.12 (n = 2), 0.13, 0.14 (n = 3), 0.15, 0.16 (n = 2) mg/kg. Based on these results it is appropriate to establish a Table 4 entry of 0.5 mg/kg for pyraclostrobin on AS 0081 Straw and fodder of cereal grains, dry.

Animal transfer studies for epoxiconazole and pyraclostrobin suggest that no changes are required to the current animal commodity MRLs which are acceptable for the proposed use. A 3 day Export Slaughter Interval (ESI) is recommended for Opera to ensure that residues of epoxiconazole in animal commodities for export are below detectable limits. The target tissue for the ESI is liver. The ESI is the same as is required for epoxiconazole in the registered product Opus 125 Fungicide (Product number 57982).

2.4 Overseas registration and approved label instructions

The applicant indicated that pyraclostrobin products are registered as various brands around the world (*e.g.* Cabrio®, Aero®) in several formulation types including emulsifiable concentrates and water dispersible granules. Epoxiconazole products are also registered as various brands (*e.g.* Opus®) in several formulation types including emulsifiable concentrates and suspension concentrates.

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. Epoxiconazole has not been considered by Codex.

Pyraclostrobin has been considered by Codex. The relevant Codex MRLs together with other overseas tolerances are summarised in Table 5.

It is noted that the Codex residue definition for pyraclostrobin in plant commodities is parent compound (JMPR 2004). Only the US has established a more complex pyraclsotrobin residue definition for plant material (sum of parent and its desmethoxy metabolite).

The overseas residue definitions for epoxiconazole in plant commodities are equivalent to the Australian definition.

Table 5: Overseas MRLs in mg/kg for pyraclostrobin and epoxiconazole in plant commodities.

Chemical	Commodity	Australia	Codex	Japan	US	EU
Pyraclostrobin	Cereal grains	*0.01 (proposed)				
	Barley		0.5	0.4	1.4	0.3
	Oats		0.5		1.2	0.3
	Wheat		0.2	0.02	0.02	0.1
	Cereal forage, green	5 (proposed)				
	Straw and fodder of cereal grains, dry	0.5 (proposed)	30			
	Barley hay				25	
	Barley straw				6.0	
	Oat hay				18	
	Oat straw				15	
	Wheat hay				6.0	
	Wheat straw				8.5	
Epoxiconazole	Cereal grains	0.05 (proposed)				
	Barley			0.5 (provisional)		1
	Oats					1
	Wheat			0.5 (provisional)		0.2
	Cereal forage, green	5 (proposed)				
	Straw and fodder of cereal grains, dry	7 (proposed)				

Animal commodities

The Codex residue definition for pyraclostrobin in animal commodities is parent compound (JMPR 2004). Only the US have established a more complex pyraclostrobin residue definition for animal commodities. The US residue definition for pyraclostrobin in animal commodities is the combined residues of pyraclostrobin carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3yl]oxy]methyl]phenyl]methoxy-methyl ester and its metabolites convertible to 1-(4-chlorophenyl)-1H-pyrazol-3-ol and 1-(4-chloro-2-hydroxyphenyl)-1H-pyrazol-3-ol, expressed as parent compound.

Overseas residue definitions for epoxiconazole in animal commodities are equivalent to the Australian definition.

The following overseas animal commodity MRLs /tolerances have been established:

Table 6: Overseas MRLs in mg/kg for pyraclostrobin and epoxiconazole in animal commodities.

Chemical	Commodity	Australia	Codex	Japan	US	EU
Pyraclostrobin	Edible offal (mammalian)	*0.05	*0.05			
	Cattle liver			1.5	1.5	
	Cattle kidney			0.2		
	Cattle, edible offal			0.2		
	Cattle, meat by-products, except liver				0.2	
	Bovine liver					*0.05
	Bovine kidney					*0.05
	Bovine edible offal					*0.05
	Eggs	*0.05	*0.05			
	Meat [mammalian] [in the fat]	*0.05				
	Meat (from mammals other than marine)		0.5			
	Cattle muscle			0.1		
	Cattle meat				0.1	
	Cattle fat			0.1	0.1	
	Bovine meat					*0.05
	Bovine fat					*0.05
	Milks	*0.01	0.03	0.1	0.1	*0.01
	Poultry, edible offal of	*0.05	*0.05			
	Poultry meat [in the fat]	*0.05	*0.05 (not specified in the fat)			
Epoxiconazole	Edible offal (mammalian)	0.05				
	Cattle, liver			0.05 (provisional)		
	Cattle, kidney			0.05 (provisional)		
	Cattle, edible offal			0.05 (provisional)		
	Bovine liver					0.2
	Bovine kidney					*0.01
	Bovine edible offal					0.02
	Eggs	*0.01				
	Meat (mammalian)	*0.01				

Chemical	Commodity	Australia	Codex	Japan	US	EU
	Cattle, muscle			0.01 (provisional)		
	Cattle, fat			0.01 (provisional)		
	Bovine meat					*0.01
	Bovine fat					*0.01
	Milks	*0.005		0.01 (provisional)		*0.002
	Poultry meat [in the fat]	*0.01				
	Poultry, Edible offal of	*0.01				

It is noted that according to the US pyraclstrobin residue definition low residues (0.15 mg/kg) may be expected in cattle liver as a result of the proposed use of Opera on cereals. However, residues will remain well within the US MRL for pyraclostrobin on cattle liver.

2.6 Current and proposed Australian MRLs for epoxiconazole and pyraclostrobin

The current MRLs for epoxiconazole and pyraclostrobin are listed below:

Table 1

Compound	Food		MRL (mg/kg)
Pyraclostrobin			
	MO 0105	Edible offal (Mammalian)	*0.05
	PE 0112	Eggs	*0.05
	MM 0095	Meat [mammalian][in the fat]	*0.05
	ML 0106	Milks	*0.01
	PM 0111	Poultry, Edible offal of	*0.05
	PM 0110	Poultry meat [in the fat]	*0.05
Epoxiconazole			
	GC 0640	Barley	0.05
	MO 0105	Edible offal (mammalian)	0.05
	PE 0112	Eggs	*0.01
	MM 0095	Meat (mammalian)	*0.01
	ML 0106	Milks	*0.005
	PM 0110	Poultry meat [in the fat]	*0.01
	PO 0111	Poultry, Edible offal of	*0.01
	GC 0654	Wheat	0.05
	CM 0654	Wheat bran, unprocessed	0.3
	CF 1210	Wheat germ	0.2

Table 3

Compound	Residue
Pyraclostrobin	Commodities of plant origin: Pyraclostrobin Commodities of animal origin: Sum of pyraclostrobin and metabolites hydrolysed to 1-(4-chloro-phenyl)-1H-pyrazol-3-ol, expressed as pyraclostrobin
Epoxiconazole	Epoxiconazole

Table 4

Compound	Animal feed commodity		MRL (mg/kg)
Pyraclostrobin			
	AB 0226	Apple pomace, dry	25
	AB 0269	Grape pomace, dry	10
Epoxiconazole			
		Barley forage, green	5
	AS 0640	Barley straw and fodder, dry	7
		Wheat forage, green	5
	AS 0654	Wheat straw and fodder, dry	7

The following amendments to the MRL Standard are proposed as a result of evaluation of the data for Opera Fungicide:

Table 1

Compound	Food		MRL (mg/kg)
Epoxiconazole			
DELETE:	GC 0640	Barley	0.05
	GC 0654	Wheat	0.05
Epoxiconazole			
ADD:	GC 0080	Cereal grains	0.05
Pyraclostrobin			
ADD:	GC 0080	Cereal grains	*0.01

Table 4

Compound	Animal feed commodity		MRL (mg/kg)
Epoxiconazole DELETE:		Barley forage, green	5
		Wheat forage, green	5
	AS 0640	Barley straw and fodder, dry	7
	AS 0654	Wheat straw and fodder, dry	7
Epoxiconazole ADD:		Cereal forage, green	5
	AS 0081	Straw and fodder of cereal grains, dry	7
Pyraclostrobin ADD:		Cereal forage, green	5
	AS 0081	Straw and fodder of cereal grains, dry	0.5

2.7 Potential Risk to Trade

Export of treated produce containing finite (measurable) residues of pyraclostrobin and epoxiconazole 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 trade in cereals and their processed products is low as residues in grain at harvest are expected to be below the LOQ (0.01 mg/kg). Although the epoxiconazole MRL for cereal grains is 0.05 mg/kg, the residue data suggest that actual levels are closer to 0.01 mg/kg.

The overall risk to export trade in animal commodities is considered to be low. No changes have been proposed to the current animal commodity MRLs for pyraclostrobin and epoxiconazole which are established at the respective LOQs with the exception of the epoxiconazole edible offal (mammalian) MRL at 0.05 mg/kg. The 3 day export slaughter interval required for other epoxiconazole containing products has also been recommended for Opera to ensure that residues in offal are below detectable limits.

With respect to the risk to trade in oaten hay there is a Codex MRL of 30 mg/kg for pyraclostrobin on the Straw and Fodder (dry) of cereal grains, significantly above the proposed Australian MRL. For epoxiconazole, the cereal forage and straw and fodder group MRLs will be established at the same level as the current wheat and barley forage and straw and fodder MRLs.

3 CONCLUSION

Residues of epoxiconazole and pyraclostrobin in wheat, barley and oat grain as a result of the proposed use of Opera Fungicide are expected to be below detectable limits (0.01 mg/kg). Therefore the risk to trade in cereal grains and processed products is considered to be low.

Detectable residues may be present in the forage and fodder of cereals, however no changes are required to the current animal commodity MRLs for epoxiconazole and pyraclostrobin. A 3 day Export Slaughter Interval has been recommended for livestock that have consumed treated cereal forage and fodder to ensure that residues of epoxiconazole in edible offal (mammalian) are below detectable limits. The risk to trade in animal commodities is also considered to be low.

Cereal hays are also major export commodities and the major export market, Japan, has not established relevant MRLs. However a Codex MRL is established for pyraclostrobin on the Straw and fodder (dry) of cereal grains. The epoxiconazole group MRLs for cereal forage and straw and fodder will be established at the same levels as the current MRLs for wheat and barley forage and straw and fodder.

Comment is sought on the potential for Opera Fungicide to prejudice Australian trade when it is used to treat various diseases in wheat, barley and oats.

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

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