



Maximum residue limits (MRLs) for pesticides registered¹ for use on Australian pome fruit (apples and pears).

This information bulletin provides a list of maximum residue limits (MRLs) for pesticides registered¹ for use in Australia on apples and pears. Listed in the table are MRLs for Australia, as established by Food Standards Australia New Zealand and a number of countries to which Australian apples and pears are exported as at July 2008. The main purpose of this bulletin is to inform growers, packers and marketers of the export requirements for pesticide residues. The critical element of this information is that Australian MRLs **do not apply** to other countries, and even though a chemical may be registered in Australia, this may not be the case in another country. If an MRL is 'not set', generally a zero tolerance applies (refer to end of table for full details).

Organisations marketing to overseas countries should be aware that the information provided below represents **the official standards**, but **not necessarily the marketing requirements**. Marketers should refer to their contractual arrangements concerning agreed residue limits.

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Active ingredient ¹	Maximum residue limit (mg/kg) for apples and pears										
	Australia ²	Codex ^{2,4}	Malaysia ³	Singapore ⁵	Japan ²	United States ²	Taiwan ⁶	Indonesia ²	Canada	United Kingdom ^{7, 11}	European Union ^{2, 11}
ORGANOPHOSPHATE INSECTICIDES											
Azinphos-methyl	2.0	2.0	not set	1.0	2.0 ⁸	1.5	2.0	1.0	2.0	0.5	0.5
Chlorpyrifos	T0.5	1.0	not set	1.0 (A), 0.5 (P)	1.0 (A), 0.5 (P)	1.5 (A), 0.05 (P)	1.0	1.0 (A)	1.5 (A)	0.5	0.5
Diazinon	0.5	0.3	not set	0.5	0.1	0.5	1.0	0.5	0.75	0.3	0.01
Dimethoate	5.0	1.0 (P)	not set	2.0	1.0	2.0	not set	1.0	2.0	0.02	0.02
Fenitrothion	0.5 (A), 0.1 (P)	not set	not set	2.0 (A), 0.5 (P)	0.2	not set	not set	0.5	not set	0.5	0.5
Fenthion	2.0	not set	not set	2.0	2.0	not set	not set	2.0	not set	not set	not set
Malathion	2.0 (A), 0.5 (P)	0.5 (A)	not set	2.0 (A)	0.5	8.0	not set	2.0 (A), 0.5 (P)	2.00	0.5	0.5
Methidathion	0.2	0.5 (A), 1 (P)	not set	0.2	0.5 (A), 1.0 (P)	0.05	not set	0.5	0.5	0.3	0.3
Omethoate	2.0	not set	not set	see dimethoate	1.0	see dimethoate	0.2	not set	2.0	not set	0.2
Parathion	not set	not set	not set	not set	0.3	not set	not set	not set	1.0	0.05	0.05
Parathion-methyl	T0.5	0.2 (A)	not set	not set	0.2	1.0	not set	0.2	not set	0.02	0.2
Prothiofos	0.05	not set	not set	not set	0.3 (A), 0.1 (P)	not set	not set	not set	not set	not set	not set

Active ingredient ¹	Maximum residue limit (mg/kg) for apples and pears										
	Australia ²	Codex ^{2,4}	Malaysia ³	Singapore ⁵	Japan ²	US ²	Taiwan ⁶	Indonesia ²	Canada	United Kingdom ⁷	EU ²
ORGANOPHOSPHATE INSECTICIDES											
Trichlorfon	0.1	not set	not set	0.1	2.0 (A), 0.5 (P)	not set	not set	2.0 (A)	not set	not set	0.5
ORGANOCHLORINE INSECTICIDES											
Aldrin and Dieldrin	E 0.05	E0.05	not set	0.05	ND	0.03	not set	0.05	not set	0.01	0.01
DDT	E 1.0	not set	not set	1.0	0.2	0.1	not set	1.0	not set	0.05	0.05
Dicofol	5.0	not set	not set	5.0	3.0	5.0	not set	5.0	3.0	0.02	0.02
Endosulfan	1.0	1.0	2.0	2.0	1.0	2.0	not set	2.0	2.0	0.05 (A); 0.3 (P)	0.3
Heptachlor	not set	not set	not set	not set	0.01 ⁸	0.01	not set	not set	not set	not set	0.01
Lindane (gamma HCH)	E 2.0	not set	not set	0.5 (A)	2.0 (A), 1.0 (P)	not set	not set	0.5	3	0.01	0.01
SYNTHETIC PYRETHROID INSECTICIDES											
Bifenthrin	0.05 (A), 0.5 (P)	0.5 (P)	not set	not set	0.5	0.5 (P)	1.0	not set	not set	0.3	0.3
Cypermethrin	1.0	2.0	2.0	2.0	2.0	not set	2.0	2.0	1.0(A); 0.5 (P)	1.0	1.0
Fluvalinate	0.1 (A)	not set	not set	not set	0.5 (A), 2 (P)	not set	not set	not set	not set	not set	not set
Pyrethrin	1.0	not set	not required	1.0	1.0	1.0	not set	not set	1.0	not set	1.0
OTHER INSECTICIDES / MITICIDES											
Abamectin	0.01	0.02	not set	not set	0.02	0.02	not set	not set	0.02	not set	0.01
Bifenazate	2.0	not set	not set	not set	2.0	0.75	not set	not set	not set	not set	not set
Carbaryl	5.0	T5.0	not set	5.0	1.0 (A), 5.0 (P)	not set	1.0	5.0	5.00	0.05 ¹¹	3.0
Chlorfenapyr	0.5	not set	not set	not set	1.0	not set	0.5 (P)	not set	not set	0.05	0.05
Clofentezine	0.1	0.5	not set	not set	1.0 (A), 0.5 (P)	0.5	not set	0.5	0.50	0.5	0.5
Fenbutatin oxide	3.0	5.0	not set	5.0	5.0	15.0	2.0	5.0	3.00	2.0	2.0
Fenoxycarb	2.0	not set	not set	not set	2.0	not set	not set	not set	not set	not set	not set
Fenpyroximate	0.3	not set	not set	not set	0.5 (A), 1.0 (P)	not set	not set	not set	not set	not set	not set
Hexythiazox	1.0	0.5	not set	not set	1.0	1.7	0.5	not set	not set	not set	not set
Imidacloprid	0.3 (A)	0.5 (A), 1 (P)	not set	not set	0.5 (A), 1.0 (P)	0.5 (A), 0.6 (P)	0.5 (P)	not set	0.5 (A); 0.6 (P)	not set	not set
Indoxacarb	2.0	0.5 (A); 0.2 (P)	not set	not set	1.0 (A) ⁸ , 0.9(P) ⁸	1 (A), 0.2 (P)	not set	not set	not set	not set	0.5 ⁸ (A)
Methomyl	1.0 (A), 3.0 (P)	2.0	not set	5.0 (A)	3.0 ⁸	1.0 (A)	0.5	2.0 (A)	0.5 (A)	T (0.3)	0.2
Piperonyl butoxide	8.0	not set	not set	8.0	8.0 ⁸	8.0	not set	8.0	8.00	not set	not set
Pirimicarb	0.5	1.0	not set	1.0	1.0	not set	not set	not set	0.5 (A)	not set	not set
Propargite	3.0	3.0 (A), 5.0 (P)	not set	3.0	3.0 (A) ⁸ , 5.0 (P) ⁸	not set	not set	5.0	not set	not set	not set
Pyridaben	0.5	not set	not set	not set	2.0	0.5 (A), 0.75 (P)	0.5	not set	0.5(A); 0.75(P)	not set	not set
Spinosad	0.5	0.1 (A)	not set	not set	0.5 (A); 0.5 (P) ⁸	0.2	not set	not set	0.1 (A)	T (1.0)	1.0
Tebufenozide	1.0	1.0	not set	not set	1.0 (A), 1.0 (P) ⁸	1 (A), 1.5 (P)	0.5	not set	1.00	not set	not set
Tebufenpyrad	1.0	not set	not set	not set	0.5	not set	not set	not set	not set	not set	not set
Tetradifon	5.0	not set	not set	not set	1.0 ⁸	5.0	not set	not set	5.00	not set	not set

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	Australia ²	Codex ^{2,4}	Malaysia ³	Singapore ⁵	Japan ²	US ²	Taiwan ⁶	Indonesia ²	Canada	United Kingdom ⁷	EU ²
OTHER INSECTICIDES / MITICIDES - continued											
Thiacloprid	1.0	not set	not set	not set	2.0 ⁸	0.3	not set	not set	not set	T0.5 (A); T0.4 (P)	0.3 ⁸
PLANT GROWTH REGULATORS											
Aminoethoxyvinylglycine	0.1 (A)	not set	not set	not set	0.09(A), 0.08(P)	0.08	not set	not set	not set	not set	not set
Benzyladenine	0.2 (A), T0.2 (P)	not set	not set	not set	0.1	not required (A)	not set	not set	not set	not set	not set
Diphenylamine	10.0 (A), 7.0 (P)	10.0 (A), 5.0 (P)	not set	5.0	10.0 (A), 5.0(P)	10.0 (A)	not set	5.0 (A)	5.0 (A)	5.0 (A), 10.0 (P)	5.0 (A), 10.0 (P)
Ethephon	1.0 (A)	5.0 (A)	not set	not set	5.0 (A), 3.0(P)	5.0 (A)	2.0	5.0 (A)	3.0 (A)	0.5 (A); 0.05 (P) ¹¹	3.0
Pacllobutrazol	1.0	not set	not set	not set	0.5 (A), 1.0 (P)	not set	not set	0.5 (A)	not set	not set	not set
FUNGICIDES											
Benomyl	see carbendazim	see carbendazim	not set	not set	3.0	7.0 (to be revoked on 1/1/08)	not set	5.0 (A)	5.00	see Carbendazim	see Carbendazim
Bupirimate	1.0 (A)	not set	not set	not set	0.8 (A), 0.5 (P)	not set	2.0	not set	not set	not set	not set
Captan	10.0	25.0 T	not set	25.0	5.0 (A), 25.0 (P)	25.0	not set	25.0	5.00	not set	3.0
Carbendazim	5.0	3.0	not set	2.0	3.0	not set	3.0	not set	5.00	2.0	2.0
Cyprodinil	0.05	0.5 (A)*, 1 (P)	not set	not set	5.0	0.1	1.0	not set	0.10	not set	not set
Difenoconazole	0.3	not set	not set	not set	1.0	not set	0.5	not set	not set	not set	not set
Dithianon	2.0	5.0	not set	not set	5.0	not set	not set	not set	not set	not set	not set
Dithiocarbamates (Mancozeb, Metiram, Thiram, Zineb and Ziram)	3.0	2.0 (A), 5.0 (P)	not set	3.0; ziram 7.0	5.0	Ferbam 7.0; Mancozeb 7.0 (A), 10.0 (P); Maneb 2.0 (A); Metiram 2.0 (A); Thiram 7.0 (A); Ziram 7.0	2.5	3.0	7.00	3.0	3.0 (Maneb)
Dodine	5.0	5.0	not set	5.0	5.0	5.0	2.0	5.0	5.00	not set	1.0
Fenarimol	0.2	0.3	not set	not set	1	0.1	0.5	not set	not set	0.3	0.3
Fluazinam	0.01 ⁹	not set	not set	not set	0.5	not set	0.5 (P)	not set	not set	not set	not set
Fluquinconazole	0.3	not set	not set	not set	0.05	not set	not set	not set	not set	not set	not set
Flusilazole	0.2	0.2	not set	not set	0.2	not set	0.2	not set	0.2 (A)	not set	not set
Fosetyl	1.0 (A)	not set	not set	not set	75.0 (A), 50.0 (P)	10.0	not set	not set	1.00	not set	not set
Hexaconazole	0.1	0.1 (A)	not set	not set	0.5	not set	1.0	not set	not set	0.1	0.1
Imazalil	5.0	5.0	not set	not set	5.0	not set	not set	5.0	not set	5.0	2.0
Iprodione	3.0	5.0	not set	10.0	10.0	not set	5.0	10.0	not set	5.0 (A) ¹¹ ; 10.0 (P)	10.0
Kresoxim-methyl	0.1	0.2	not set	not set	5.0	0.5	1.0	not set	0.50	0.2	0.2
Myclobutanil	0.5	0.5	not set	not set	5.0 (A), 1.0 (P)	0.5 (A)	0.5	not set	0.5 (A); 0.3(P)	0.5	0.5
Oxythioquinox	0.5	not set	not set	not set	not set	not set	not set	not set	not set	not set	not set
Penconazole	0.1	0.2	not set	not set	0.2	not set	0.2	not set	not set	0.2	0.2
Pyrimethanil	0.05	not set	not set	not set	5.0 (A), 1.0 (P)	3.0	not set	not set	not set	5.0	not set

Active ingredient ¹	Maximum residue limit (mg/kg) for apples and pears										
	Australia ²	Codex ^{2,4}	Malaysia ³	Singapore ⁵	Japan ²	US ²	Taiwan ⁶	Indonesia ²	Canada	United Kingdom ⁷	EU ²
FUNGICIDES - (continued)											
Thiabendazole	10.0	3.0	not set	10.0	3.0	10.0	5.0	10.0	10.00	5.0	5.0
Triadimefon	1.0 (A)	0.5	not set	0.5	0.5	1.0	0.5	not set	not set	0.2 (A); 0.1 (P)	0.2 (A); 0.1 (P)
Trifloxystrobin	0.3	0.7 ¹⁰	not set	not set	3.0 (A) ⁸ , 0.7 (P) ⁸	0.5	1.0 (Wax Apple); 0.5 (P)	not set	not set	0.5	0.5 ⁸
Triforine	1.0	2.0 (A)	not set	2.0 (A)	2.0	not set	1.0	2.0 (A)	not set	2.0	2.0
HERBICIDES - Ureas											
Diuron	0.5	not set	not set	not set	0.05 ⁸	1.0	not set	not set	not set	not set	not set
Linuron	not set	not set	not set	not set	0.2 ⁸	not set	not set	not set	not set	not set	not set

Notes to Table:

1 The registration status of the chemicals listed may vary for each commodity and in each State. Prior to using any chemical, consult the label and/or regulatory authority in your State. The persistent organochlorines (DDT, dieldrin and lindane) are not registered for use. This table does not include herbicides, pheromones and other solvents which are registered for use as they are considered to be at low risk of causing unacceptable residues in apples and pears.

2 AUSTRALIA, JAPAN, US, INDONESIA and EU: in the absence of a set MRL, zero tolerance applies.

3 MALAYSIA: For those values listed as 'not set', refer to the corresponding Codex value. If no Codex MRL exists a default MRL of 0.01 mg/kg then applies.(Regulation 41).

4 Many countries default to maximum residue limits established by CODEX including ALGIERS, ANGOLA, BAHAMAS, BANGLADESH, BARBADOS, COLOMBIA, DOMINICAN REPUBLIC, HONDURAS, HONG KONG, JORDAN, LEBANON, NICARAGUA, PAKISTAN, PANAMA, PERU, PHILIPPINES, THAILAND, TRINIDAD & TOBAGO, TUNISIA AND VENEZUELA.

5 SINGAPORE: In the absence of a set MRL, default to the Codex level.

6 TAIWAN: In the absence of a set MRL, except for those import tolerances developed, a zero tolerance applies.

7 UNITED KINGDOM: Until relatively recently, MRLs applicable to trade in the UK were set by the national authorities. In recent years, however, MRLs have been set by the European Commission. The UK accepts, in order of precedence, UK temporary national MRLs and import tolerances, EC MRLs, UK National MRLs then Codex MRLs. Importers may apply for an 'import tolerance' if the existing MRL does not reflect uses of plant protection products in non-EU countries. The Food Safety Act means that even if there are no UK, EC or Codex MRLs supplies must not contain residues which will be harmful to consumers.

8 Provisional MRLS

9 MRL or EMRL is set at or about the limit of determination

10 Codex Interim MRL (2005-2009)

11 Exporters - Please check with importer on the MRL value to be used, that is, either UK or EU values. Exporters should check whether the authorities will recognise these levels.

'A' Apple 'P' Pear Otherwise refers to both.

'not set' denotes that no MRL has been established, refer to details above for each country's default value.

'not required' denotes that no MRL has been established, and any detection is permissible.

'T' denotes that the MRL residue definition or use is temporary to enable further experimental work to be carried out in Australia or overseas, and will be reconsidered at some further date. This symbol is also used in cases where the MRL is being phased out. For the UK, temporary UK MRLs take precedence over national, EU and Codex MRLs.

'E' Extraneous MRL (Australia) means the maximum permitted limit of a pesticide residue, arising from environmental sources other than the use of a pesticide directly or indirectly on the food, expressed in milligrams of the chemical per kilogram of the food (mg/kg).

This table has been compiled with reference to the information obtained from the following Food/Agricultural Authorities or publications:

Australia - FSANZ *Food Standards Code 'Standard 1.4.2'* Amendment 91, dated 15 February 2007 available on the FSANZ website

<http://www.foodstandards.gov.au/thecode/foodstandardscode.cfm>.

The MRLs set by FSANZ are based on those established by APVMA in the MRL Standard [<http://www.apvma.gov.au/>], and may vary slightly due to delays in the legislative process.

Malaysia - *Laws of Malaysia. Food (Amendment) Regulations 2004* available on the Ministry of Health Food Safety and Quality Division website [<http://www.moh.gov.my/fqc/index.htm>] downloaded March 2005. Link to the Sixteenth Schedule (Regulation 41) Pesticide Residues:

http://fsis.moh.gov.my/fqc/ReferenceBooks/FRschedule/sc16_reg41/Schedule16_reg41.htm

Canada - List of Maximum Residue Limits Regulated Under the Pest Control Products Act as of 16 June 2008

http://www.pmra-arla.gc.ca/english/legis/docs/mrls_reg_PCPA_11jun08-e.pdf

<http://www.pmra-arla.gc.ca/english/legis/maxres-e.html>

Codex - Codex Alimentarius Commission. *FAO/WHO Food Stds Codex Alimentarius Pesticide Residues in Food - MRLs & Extraneous MRLs - (last updated 20 June 2007)*

http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp

Singapore - *Revised Edition of Subsidiary Legislation - The Sale of Food Act (Chapter 283)*, 1990 edition and all amendments up to May 2004.

Japan - *Specifications and Standards for Foods, Food additives, etc. Under the Food Sanitation Law (Abstracts)* from

<http://www.mhlw.go.jp/english/topics/foodsafety/positivelist060228/index.html>

US - EPA Pesticides and Food [<http://www.epa.gov/>] dated May 2004 and from the USFDA Website [<http://www.cfsan.fda.gov/>] Action Levels for PTitle 40--Protection of Environment CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY (CONT) PART 180--TOLERANCES AND EXEMPTIONS FROM TOLERANCES FOR PESTICIDE CHEMICALS IN FOOD downloaded August 2007.

http://www.access.gpo.gov/nara/cfr/waisidx_06/40cfr180_06.html

Taiwan - Department of Health, Taiwan, ROC. *Food Sanitation - Pesticide Residue Limits in Foods (DOH Food No. 0960402905)*, from the Department of Health Website [<http://food.doh.gov.tw/>] amended 11 May 2007.

<http://www.doh.gov.tw/ufile/doc/Pesticide%20Residue%20Limits%20in%20Foods9607.pdf>

Indonesia - Joint Decision by the Ministers for Health and Agriculture No. 881/Menkes/SKB/VIII/1996, No. 771 /Kpts/TP.270/8/1996 concerning *Maximum Limits of Pesticide Residues in Agricultural Products* available on the Ministry of Agriculture website [<http://www.deptan.go.id/>], downloaded March 2005. Note: Indonesia is in the process of draft new regulations for MRLs, which was expected to be released during 2005. No information on this has been obtained yet.

United Kingdom - *The Pesticides (Maximum Residue Levels in Crops, Food and Feeding Stuffs) (England and Wales) Regulations 1999* (as amended). Trade to and within the UK: must comply in the first instance with UK and EC MRLs (where there is more than one MRL listed for a pesticide/crop combination UK temporary MRLs take precedence). If there is no UK or EC MRL for a pesticide/crop combination, you might refer to the MRLs set by Codex for guidance. Note: Codex MRLs do not have statutory force in the UK.

<https://secure.pesticides.gov.uk/MRLs>

Last updated 15/4/08

European Union - European Directives 76/895/EEC, 86/362/EEC, 86/363/EEC, 90/642/EEC and amending legislation available from the Europa website [<http://europa.eu.int/>], downloaded August 2007. Plant Protection - Pesticide Residues website -

http://ec.europa.eu/food/plant/protection/pesticides/index_en.htm