



Australian Government

Department of Agriculture, Fisheries and Forestry

NATIONAL RESIDUE SURVEY

INFORMATION BULLETIN - September 2009

International Pig Maximum Residue Limits (MRLs)

This information bulletin provides a list of maximum residue limits (MRLs) for pesticides, veterinary medicines and contaminants that are included in the NRS random survey for pig matrices. Listed in the table are MRLs for Australia as developed in the Australia New Zealand Food Standards Code and a number of countries to which Australian pig products may be exported. The main purpose of this bulletin is to inform producers of the export requirements in regards to residues of pesticides, veterinary medicines and contaminants. **The critical element of this information is that Australian MRLs do not apply to other countries.** If an MRL is 'not set', in some instances, a zero tolerance applies (refer to the notes below the 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 the contractual arrangements concerning agreed residue limits.

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Group of substances	Maximum residue limit (mg/kg) for pig									
	Compounds	Matrix	AUSTRALIA (Food Standards Code)	CODEX	CANADA	EUROPEAN UNION	JAPAN	KOREA	UNITED STATES of AMERICA	
ANABOLIC and UNAUTHORISED SUBSTANCES										
A1	Stilbenes									
	dienoestrol	liver	not set	not set	not set	not set	not set	not set	not set	not set
	diethylstilboestrol		not set	not set	not set	not set	not set	not set	not set	not set
	hexoestrol		not set	not set	not set	not set	not set	not set	not set	not set
A3	Steroids									
	Corticosteroids	betamethasone	not set	not set	not set	0.002	P (0.002)	not set	not set	
		dexamethasone	0.1 (eo)	not set	not set	0.002	P (0.04)	not set	not set	
		trenbolone acetate	not set	not set	not set	not set	ND	not set	not set	
A4	Resorecylic acid lactones									
	Zeranol	liver	not set	not set	not set	not set	P (0.002)	not set	not set	

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	Compounds	Matrix	AUSTRALIA (Food Standards Code)	CODEX	CANADA	EUROPEAN UNION	JAPAN	KOREA	UNITED STATES of AMERICA		
ANABOLIC and UNAUTHORISED SUBSTANCES - Cont											
A5	Beta agonists										
		Cimaterol	liver	not defined	not set	not set	not set	not set	not set	not set	
		Clenbuterol		not defined	not set	not set	not set	not detected	not set	not set	
		Mabuterol		not defined	not set	not set	not set	not set	not set	not set	
		Ractopamine ¹		0.2	not set	0.12 ²	not set	0.04	not set	0.15	
		Salbutamol		not defined	not set	not set	not set	not set	not set	not set	
A6	Prohibited compounds										
		Chloramphenicol	muscle	prohibited	prohibited	prohibited	prohibited	prohibited	prohibited	prohibited	
VETERINARY DRUGS and CONTAMINANTS											
B1	Antibacterials										
	Aminoglycosides	apramycin	kidney	2.0 (eo)	not set	0.1	not set	P (0.06)	not set	0.10	
		dihydrostreptomycin		0.3 (eo) ³	1.0	not set	1.0	1.0	1.0	1.0	2.0
		gentamycin		not set	5.0	0.4	0.75	5.0	5.0	5.0	0.4
		neomycin		T10.0	10.0	10.0 ²	5.0	10.0	10.0	10.0	7.2
		streptomycin		0.3 (eo)	1.0	not set	1.0	1.0	1.0	1.0	2.0
	Beta-lactams	amoxicillin		0.01 (eo) ³	not set	not set	0.05	P (0.04)	not set	not set	
		ampicillin		not set	not set	0.01 (et)	0.05	P (0.009)	0.01 (m)	0.01 (et)	
		benzyl penicillin G		0.06 (eo) ³	0.05	0.05 (et)	0.05	0.05	0.05	zero (et)	
		cloxacillin		not set	not set	not set	0.3	P (0.3)	not set	not set	
	Cephalosporins	ceftiofur		not set	6.0	5.0	6.0	6.0	6.0	0.25	
		cefuroxime		not set	not set	not set	not set	not set	not set	not set	
		cephalonium		not set	not set	not set	not set	not set	not set	not set	
	Lincosamides	lincomycin		0.2 (eo)	1.5	0.5 (liver) ²	1.5	P (1.5)	not set	0.6 (liver)	
	Macrolides	erythromycin		0.3 (eo) ³	not set	0.1 (et)	0.2	P (0.05)	0.1 (m)	0.1 (et)	
		tilmicosin		1.0 (eo)	1.0	not set	1.0	1.0	1.0	7.5 (liver)	
		tulathromycin		3.0	not set	5.0	3.0	9.0	not set	15	
		tylosin		0.2 (eo) ³	not set	0.2	0.1	P (0.05)	0.2 (m)	0.2	
	Sulfonamides	sulfadiazine		0.1 (eo)	not set	0.1 (et) ²	0.1 ⁴	P (0.1)	0.1	not set	
		sulfadoxine		0.1 (eo) ³	not set	0.1 (et) ²	0.1 ⁴	P (0.1)	0.1	not set	
		sulfafurazole		not set	not set	not set	0.1 ⁴	not set	not set	not set	
		sulfamerazine		not set	not set	0.1 (et) ²	0.1 ⁴	P (0.1)	0.1	not set	
		sulfamethazine/ sulfadimidine		0.1 (eo)	0.1	0.1 (et)	0.1 ⁴	0.1	0.1	0.1 (et)	
		sulfamethoxydiazine		not set	not set	not set	0.1 ⁴	not set	not set	not set	
		sulfapyridine	not set	not set	0.1 (et) ²	0.1 ⁴	P (0.1)	not set	not set		

Group of substances	Maximum residue limit (mg/kg) for pig									
	Compounds	Matrix	AUSTRALIA (Food Standards Code)	CODEX	CANADA	EUROPEAN UNION	JAPAN	KOREA	UNITED STATES of AMERICA	
VETERINARY DRUGS and CONTAMINANTS										
B1	Antibacterials - Cont									
	Sulfonamides	sulfaquinoxaline	kidney	not set	not set	not set	0.1 ⁴	P (0.1)	0.1	not set
		sulfathiazole		not set	not set	0.1(et)	0.1 ⁴	P (0.1)	0.1	0.1 (et)
		sulfatroxazole		0.1 (eo)	not set	not set	0.1 ⁴	P (0.1)	not set	not set
	Tetracyclines	chlortetracycline		0.6	1.2	4.0	0.6	1.2	1.2	12.0
		doxycycline		not set	not set	not set	0.6	P (0.05)	0.6	not set
		oxytetracycline		0.6	1.2	1.2 ³	0.6	1.2	1.2	12.0
	tetracycline	not set	1.2	0.25	0.6	1.2	1.2	12.0		
	Nitroimidazoles	dimetridazole	muscle	0.005	not set	not set	not set	not set ⁵	not set	not set
	Other	florfenicol	muscle	0.5	not set	0.25 ³	0.30	P (0.2)	not set	0.2
		thiamphenicol		not set	not set	not set	0.05	P (0.02)	0.5	not set
OTHER VETERINARY DRUGS										
B2a	Anthelmintics									
	Benzimidazoles	albendazole	liver	not set	5.0	not set	0.1	not set	5.0	not set
		fenbendazole		not set	0.5	4.5	0.5	not set	0.5	6.0
		mebendazole		0.02 (eo) ³	not set	not set	not set	P (0.02)	not set	not set
		oxibendazole		not set	not set	not set	0.2	P (0.2)	not set	not set
		oxfendazole		3.0	0.5	not set	0.5	not set	0.5	not set
		thiabendazole		0.2 (eo)	0.1	0.1 (et)	not set	0.1	0.1	0.1 (et)
	Macrocyclic lactones	abamectin	fat	0.02 (mf)	not set	not set	not set	P (0.02)	not set	not set
		doramectin		0.1 (mf)	0.15	0.01 (m)	0.1	P (0.15)	0.15	0.16 (liver)
		emamectin		0.002 (m) ³	not set	not set	not set	P (0.002)	not set	not set
		eprinomectin		not set	not set	not set	not set	P (0.1)	not set	not set
		ivermectin		0.02 (mf)	0.02	0.015 (liver)	0.02	0.02	0.02	0.02 (liver & m)
		moxidectin		not set	not set	not set	not set	P (0.5)	not set	not set
	Imidazothiazoles	morantel	liver	5.0 (eo)	not set	not set	0.8	5.0	not set	not set
	Other	spinosad	fat	T 1.0 (mf)	2.0 (m)	not set	not set	P (2.0)	not set	33.0

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	Compounds	Matrix	AUSTRALIA (Food Standards Code)	CODEX	CANADA	EUROPEAN UNION	JAPAN	KOREA	UNITED STATES of AMERICA	
OTHER VETERINARY DRUGS (cont)										
B2c	Carbamates, pyrethroids & other insecticides									
	Synthetic pyrethroids	bifenthrin	fat	2.0 (mf)	not set	not set	0.05	P (1.0)	not set	1.0
		bioresmethrin		not set	not set	not set	not set	P (0.5)	not set	not set
		cyfluthrin		0.5	not set	5.0	0.05	P (4.0)	not set	10.0
		cyhalothrin		0.5 (mf)	0.4	0.2 (m)	0.5	P (0.4)	not set	3.0 ⁶
		cypermethrin		0.05 (mf) ³	0.2 (m)	not set	0.2	P (0.2)	0.2 (m)	0.1
		deltamethrin		0.1 (mf)	0.5 (m)	not set	not set	P (0.5)	0.5 (m)	0.05
		fenvalerate (esfenvalerate)		1.0 (mf)	1.0 (m)	not set	0.2	P (1.0)	1.0 (m)	1.5
		flumethrin		not set	not set	not set	not set	P (0.005)	not set	not set
		permethrin		1.0 (mf)	1.0 (m)	not set	0.5	P (1.0)	1.0 (m)	3.0
		tau-fluvinat		not set	not set	not set	0.3	not set	not set	not set
	Triazines	cyromazine	kidney	0.05	not set	not set	0.05	P (0.10)	not set	0.2
	Pyrimidines	dicyclanil		not set	not set	not set	not set	P (0.125)	not set	not set
B2e	Non-steroidal anti inflammatory									
		flunixin	liver	not set	not set	not set	0.2	P (0.2)	not set	not set
		ketoprofen		not set	not set	not set	not set	not set	not set	not set
		oxyphenbutazone		not set	not set	not set	not set	not set	not set	not set
		phenylbutazone		not set	not set	not set	not set	not set	not set	not set
		tolfenamic acid		0.1	not set	not set	0.4	P (0.3)	not set	not set
OTHER SUBSTANCES and ENVIRONMENTAL CONTAMINANTS										
B3a	Organochlorine compounds									
		aldrin/dieldrin	fat	0.2 E(mf)	0.2 E(m)	0.2	0.2	P (0.2)	0.2 (m)	0.3
		chlordane (oxychlordane)		0.2 E(mf)	0.05 E(m)	0.1 (m)	0.05	P (0.05)	0.5 (m)	0.3
		DDT and metabolites		5.0 E(mf)	75.0 E(m)	1.0	1.0	P (5.0)	5.0 (m)	5.0
		dicofol		not set	not set	0.1 (m)	0.1	0.1	not set	not set
		endosulfan		0.2 (mf)	0.1 (m)	0.1 (m)	0.1	P (0.1)	0.1 (m)	0.2
		HCB		1.0 E(mf)	not set	not set	not set	P (0.6)	not set	0.5
		HCHs (BHC) (except γ -HCH)		0.3 E(mf)	not set	0.1 (m)	0.3	not set	not set	not set
		heptachlor (heptachlor epoxide)		0.2 E(mf)	0.2 E(m)	0.2	0.2	P (0.2)	0.2 (m)	0.2
		lindane (γ -HCH)		2.0 E(mf)	0.1 (m)	2.0	0.02	P (0.1)	2.0 (m)	4.0
		PCBs		0.2	not set	not set	not set	not set	not set	3.0

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OTHER SUBSTANCES and ENVIRONMENTAL CONTAMINANTS (cont)									
B3b	Organophosphates								
	chlorfenvinphos	fat	not set	not set	not set	not set	P (0.2)	0.2 (m)	not set
	chlorpyrifos		T0.5 (mf)	0.02 (m)	not set	not set	P (0.02)	0.02 (m)	0.20
	chlorpyrifos-methyl		0.05 (mf)	not set	not set	0.05	P (0.2)	not set	0.50
	coumaphos		0.5 (mf)	not set	0.5	not set	not set	not set	1.00
	diazinon		0.7(mf)	2.0 (m)	not set	0.7	P (2.0)	0.7 (m)	not set
	dichlorvos		0.05 (m)	0.05 (m)	not set	not set	P(0.1)	0.05 (m)	0.1(et)
	dimethoate		0.05	0.05	not set	not set	P(0.05)	0.05	not set
	ethion		not set	not set	not set	not set	P (0.2)	0.2 (m)	0.20
	famphur		not set	not set	not set	not set	P (0.1)	not set	not set
	fenitrothion ⁷	meat	T0.05(m) ³	0.05 E(m) ³	not set	not set	P (0.05)	0.05 (m)	not set
	fenthion ⁷		0.5 (m)	not set	not set	not set	P (0.1)	0.1 (m)	0.10
	malathion (maldison)	fat	1.0 (mf)	not set	not set	not set	P (2.0)	not set	4.00
	methidathion		0.5 (mf)	0.02 ³	not set	0.02	P(0.02)	0.02	not set
	parathion-methyl		T0.05(m) ³	not set	not set	0.02	P(0.05)	not set	not set
	phosmet		0.1 (m)	not set	not set	not set	P (0.2)	not set	0.20
	pirimphos-methyl		0.05 ³	0.01 (m)	not set	0.05	P(0.1)	0.05 (m)	0.02
	prothiofos		not set	not set	not set	not set	not set	not set	not set
	temephos		not set	not set	not set	not set	P (3.0)	not set	not set
	trichlorfon	0.1	not set	not set	not set	P (0.1)	0.1 (m)	not set	
B3c	Chemical elements								
	cadmium	liver	1.25	not set	not set	0.5	not set	not set	not set
	lead		0.5 (eo)	0.5 (eo)	not set	0.5 (eo)	not set	not set	not set
	mercury		not defined	not set	not set	not set	not set	not set	not set
B3d	Mycotoxins								
	zearalenone	liver	not defined	not set	not set	not set	not set	not set	not set
	α-zearalenol		not defined	not set	not set	not set	not set	not set	not set
	β-zearalenol		not defined	not set	not set	not set	not set	not set	not set
	β-zearalanol		not defined	not set	not set	not set	not set	not set	not set
B3f	Other - Fungicides								
	cyproconazole	fat	0.03 (m)	not set	not set	0.05	P(0.03)	not set	not set
	flutriafol		0.5	not set	not set	0.01	P(0.05)	not set	not set
	procymidone		T0.2	not set	not set	0.02	P(0.1)	0.05 (oap)	not set
	propiconazole		1.0 (m)	0.01 (mf) ³	not set	0.01	P(0.08)	0.05 (m)	0.05
	quintozene		not set	not set	not set	0.01	P(0.01)	not set	not set

Group of substances	Maximum residue limit (mg/kg) for pig								
	Compounds	Matrix	AUSTRALIA (Food Standards Code)	CODEX	CANADA	EUROPEAN UNION	JAPAN	KOREA	UNITED STATES of AMERICA
OTHER SUBSTANCES and ENVIRONMENTAL CONTAMINANTS (cont)									
B3f	Other - Herbicides								
	ethofumesate	fat	0.5 (mf)	not set	not set	0.1	P(0.3)	not set	not set
	metolachlor		0.05 (m)	not set	0.02(m) (s- metolachlor)	not set	P(0.02)	not set	not set
	propachlor		0.02 9mf)	not set	not set	0.05	P(0.02)	not set	0.02
B3f	Other - Insecticides								
	chlorfenapyr	fat	0.05 (mf)	not set	not set	not set	0.05	not set	not set
	indoxacarb		1.0 (mf)	1.0 (mf)	not set	0.3	P(1.0)	not set	1.5

NOTE:

- (m) meat, (eo) edible offal (IT) negotiated import tolerance.
- (mf) meat in the fat (E) Extraneous MRLs
- (et) edible tissue (P) Provisional MRL (oap) other agricultural products
- (mbypp) meat by-product (T) Temporary MRL
- MRL 'not set', any detection is a violation.
- For 'not set' shown in columns for overseas markets, exporters should consult with AQIS for specific advice regarding market access requirements for the countries of interest.
- MRL 'not defined', denotes no maximum limit set, a detection is not a contravention

¹ MRLs have been established for residues of ractopamine in tissues of pig

² Canada - Administrative MRL for which promulgation process has been initiated

³ Denotes that the maximum residue limit or the extraneous residue limit is set at or about the limit of determination.

⁴ Combined total residues of all substances within the sulphonamide group should not exceed 0.1mg/kg.

⁵ Japan's Ministry of Health Labour and Welfare (MHLW) listed 15 chemicals for which no residues may be detected ("black list") because of high human health risks - 2,4,5-T, Amitrole, Captafol, Carbadox including QCA, Chloramphenicol, Chlorpromazine, Coumafos/Coumaphos, Cyhexatin and Azocyclotin, Daminozide, Diethylstilbestrol, Dimetridazole, Metronidazole, Nitrofurans, Propham, Ronidazole.

⁶ Tolerances are established for the combined residues Lambda-cyhalothrin and an isomer gamma-cyhalothrin.

⁷ For regulatory purposes, when no MRL has been set in fat or meat (in the fat), the MRL in meat is used.

Australia, Canada and USA - At present where there is no MRL a zero tolerance applies

European Union - where there is no MRL for a commodity then default value of 0.01 mg/kg applies for pesticides only. For veterinary drugs if there is no MRL then there should be no detection.

Japan - if there is no residue limit applied a uniform limit of 0.01 mg/kg will then apply.

Korea - If there is no national standard then Korea will apply the Codex standard. If neither are applicable, the lowest of the residue limits of the pesticide in question specified for similar agricultural products shall apply to the agricultural products which the pesticides detected.

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

Australia New Zealand Food Standards Code 1.4.1 (MLs) and 1.4.2 (MRLs) (Australia only), up to Amendment 111, August 2009 available on the FSANZ website. For New Zealand purposes, maximum residue limits for agricultural compounds are regulated in the New Zealand (Maximum Residue Limits of Agricultural Compounds Mandatory Food Standard 1999 (and subsequent amendments) issued under sections 11C and 11Z of the Food Act 1981.

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

CANADA:

List of Maximum Residue Limits Regulated Under the Pest Control Products Act
Canadian MRLs established as of 16/6/09

<http://www.hc-sc.gc.ca/cps-spc/pest/protect-proteger/food-nourriture/mrl-lmr-eng.php>

Veterinary Drugs Directorate Table 1. Maximum Residue Limits (Mrls) Set By Canada Administrative Maximum Residue Limits (AMRLS) and Maximum Residue Limits (MRLS)

http://www.hc-sc.gc.ca/dhp-mps/vet/mrl-lmr/mrl-lmr_versus_new-nouveau-eng.php

CODEX:

FAO/WHO Food Stds Codex Alimentarius Pesticide Residues in Food - MRLs & Extraneous MRLs - (updated March 2009)

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

FAO/WHO Food Stds Codex Alimentarius Veterinary Drug Residues in Food - MRLs - (updated March 2009)

http://www.codexalimentarius.net/mrls/vetdrugs/jsp/vetd_q-e.jsp

Summary of Evaluations Performed by the Joint FAO/WHO Expert Committee on Food Additives.

<http://jecfa.ilsj.org>

EUROPEAN UNION: Maximum residue limits of **veterinary medicinal products** in foodstuffs of animal origin - Go down to the most recent date listed under the consolidated version - 2009-08-09.

<http://eur-lex.europa.eu/Notice.do?val=162315:cs&lang=en&list=185432:cs,162315:cs.&pos=2&page=1&nbl=2&pgs=10&hwords>

Pesticide EU-MRLs Database as of 1 September 2008

http://ec.europa.eu/sanco_pesticides/public/index.cfm

COMMISSION REGULATION (EC) No 1881/2006 of 19 December 2006 - setting maximum levels for certain **contaminants in foodstuffs**

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:364:0005:0024:EN:PDF>

JAPAN:

Japan - Specifications and Standards for Foods, Food additives, etc. Under the Food Sanitation Law (Abstracts),(MHW Notification, No. 370, 1959, amendment No.499 2005 MRLs

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

Maximum Residue Limits (MRLs) List of Agricultural Chemicals in Foods

<http://www.m5.ws001.squarestart.ne.jp/foundation/search.html>

KOREA:

Korean Food and Drug Administration (KFDA): Korean MRLs for Pesticides, website (go to English version then to 'site map' at top right hand corner; then go (MRLs for Pesticides

<http://www.kfda.go.kr/>

Veterinary MRLs obtained through the Australian Government Department of Foreign Affairs and Trade, Dept. Agriculture, Fisheries and Forestry Section, Korean Embassy. KFDA

USA:

United States Food and Drug Administration, Code of Federal Regulations

Department of Health and Human Services CFR Titles Volumes 21 (Veterinary drugs) & 40 (Pesticides); FR Titles 51, 53, 54, 55 & 57; MPI Dir 917.1, website:

<http://www.gpoaccess.gov/nara/index.html>

MRLs for Veterinary Drugs - last updated 18 August 2009

http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=79dffe982acea9e06c35d6664fb8aeca&tpl=/ecfrbrowse/Title21/21cfr556_main_02.tpl

MRLs for Pesticide Chemicals - last updated 18 August 2009

http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=2bfde6952266d018c52f77953f6287b9&tpl=/ecfrbrowse/Title40/40cfr180_main_02.tpl

MRLs for PCB - Under CPG 7111.03 - http://www.fda.gov/ora/compliance_ref/cpg/cpgfod/cpg565-200.html

USA MRLs for Chlordane - http://www.fda.gov/ora/compliance_ref/cpg/cpgfod/cpg575-100.html