



Australian Government
Department of Health and Ageing
Office of Chemical Safety

ADI LIST

ACCEPTABLE DAILY INTAKES
FOR
AGRICULTURAL AND VETERINARY CHEMICALS



Current to 31 December 2006

© Commonwealth of Australia 2005

ISSN 1446-1412

This work is copyright. You may download, display, print and reproduce this material in unaltered form only (retaining this notice) for your personal, non-commercial use or use within your organisation. Apart from any use as permitted under the Copyright Act 1968, all other rights are reserved. Requests and inquiries concerning reproduction and rights should be addressed to Commonwealth Copyright Administration, Attorney General's Department, Robert Garran Offices, National Circuit, Barton ACT 2600 or posted at <http://www.ag.gov.au/cca>



Australian Government
Department of Health and Ageing

This document includes recommendations made by the former Pesticides and Agricultural Chemicals Standing Committee (PACSC) of the National Health and Medical Research Council (NHMRC) and by the Office of Chemical Safety (OCS) in the Therapeutics Goods Administration (TGA).

Any comments or enquiries relating to the entries in this document should be addressed to:

The Office of Chemical Safety
Department of Health and Ageing
MDP 88
GPO Box 9848
Canberra, ACT 2601

CONTENTS

PREFACE	4
INTRODUCTION	5
NOTES.....	7
ALPHA LIST OF CHEMICALS	8-38

PREFACE

This document sets out the acceptable daily intakes (ADIs) for agricultural and veterinary chemicals used on food producing crops or animals. It includes entries which were recommended by the former Pesticides and Agricultural Chemicals Standing Committee (PACSC) of the National Health and Medical Research Council (NHMRC) until November 1992.

The responsibility for setting ADIs transferred to the Therapeutic Goods Administration (TGA) of the Australian Department of Health and Ageing on 12 March 1993. ADIs established by the Office of Chemical Safety (OCS) in the TGA are included in this document.

INTRODUCTION

Over the past several decades, pesticides and other agricultural chemicals and veterinary drugs have become an important factor in food production. The availability of these chemicals has enabled significant increases in agricultural productivity to be achieved.

While the consumption of agricultural and veterinary chemicals is not desirable in itself, ingestion of these substances in the form of residues in agricultural produce may occur as a consequence of their intended use. Residues resulting from proper agricultural use are low as has been consistently demonstrated in Market Basket Surveys. Nevertheless, it is essential that a mechanism exists to assess the likelihood of risks to the public, and to reduce these risks to a minimum.

Prior to the registration of an agricultural or veterinary chemical product, applicants must provide registration authorities with a great deal of information in support of the use of the product, including details of toxicological studies. The toxicological studies are assessed with a view to determining the potential hazards associated with exposure to the chemical and also, where the chemical is used on food producing crops or animals, to establishing a level of intake which would be without appreciable risk to consumers. The toxicological hazards of existing chemicals are reviewed as further data becomes available.

Toxicological studies required for agricultural and veterinary chemicals range from those measuring single dose effects to those which examine the effects of lifetime exposure. Toxicity studies are generally performed on laboratory animals such as mice, rats, rabbits, and dogs and are designed to identify potential toxic effects. The studies usually involve the feeding/administration of various levels of the compound under investigation to animals, followed by observation and monitoring of clinical parameters and pathology which are indicative of toxicity in the test species.

The range of toxicological studies required to be undertaken is detailed in the “*Ag Manual: The Requirements Manual for Agricultural Chemicals*” and the “*Vet Manual: The Requirements Manual for Veterinary Chemicals*” which are published by the Australian Pesticides and Veterinary Medicines Authority (APVMA). The immediate hazards from a chemical are determined by identifying the acute toxicity by the most likely routes of exposure, together with tests for skin and eye irritation and skin sensitisation. The potential for toxicity over longer periods, including possible tumour induction, is determined by studying the effects of repeated dosing, in some cases for the entire lifespan of the species. Multigeneration and developmental studies predict reproductive toxicity and the potential to cause birth defects, and studies are performed to assess the potential to cause effects on genetic material. Other specific investigations also may be required to clarify the mechanism of toxicity of a particular chemical.

Designs for the conduct of toxicological studies have become standardised to a large extent and international guidelines have been developed to achieve consistency in experimental techniques. In general, groups of the test species/organism are exposed to a number of dose levels (usually three) of the substance and a further group is left unexposed (control group). The treatment levels are selected so that the highest dose will cause some obvious toxic effects, while the lowest dose at least, should not result in a toxic effect. During the course of the study a range of observations is made in each group and a comparison is made of the findings in each treated group versus the control group.

Assessment of individual toxicity studies includes the determination of a no-observable-effect level (NOEL), which is the highest administered dose which does not cause any detectable

(usually adverse) effect in the study. The overall NOEL for a chemical, determined in the most sensitive species, is then used to estimate the acceptable daily intake.

The acceptable daily intake (ADI) for humans is considered to be a level of intake of a chemical that can be ingested daily over an entire lifetime without any appreciable risk to health. It is calculated by dividing the overall NOEL from the animal studies by a safety factor. The magnitude of the safety factor is selected to account for uncertainties in extrapolation of animal data to humans, variation between humans, the completeness of the toxicological data base and the nature of the potential adverse effects.

The most common safety factor is 100 which takes into account that humans may be 10 times more sensitive to the chemical than experimental animals and that a proportion of the population may be 10 times more sensitive than the average person. Where there is satisfactory information in humans, there is no necessity to extrapolate from animal data and a safety factor of 10 is considered adequate to account for inter-individual variation. On the other hand when the toxicity data base is incomplete or when the nature of the potential hazards indicate the need for additional caution, a further safety factor of 10 to 20 may be incorporated. In these situations, the overall NOEL is divided by a safety factor of 1000 to 2000 in determining the ADI.

It is important to note that the toxicological studies on which the overall NOEL is based are invariably carried out by oral dosing of animals and usually by incorporation of the chemical in the diet. The subsequent establishment of an ADI is thus directed to human exposure by the oral route. Due to possible differences in absorption and other kinetic and metabolic parameters, the comparison of intakes by other routes with the ADI should be interpreted with caution.

NOTES

1. Use of the terms JMPR or JECFA in the NOEL column indicates that the Australian ADI has been adopted from the figure established by the Joint FAO/WHO Meeting on Pesticide Residues (JMPR) or the Joint FAO/WHO Expert Committee on Food Additives (JECFA).
2. (H) indicates that the NOEL was determined on the basis of experimental data in humans.
3. The words "not necessary" in the ADI column indicates that there is a large margin of safety for consumption of residues in food when the chemical is used according to good agricultural/veterinary practice. Due to low levels of residues and the lack of oral activity of these chemicals, a numerical ADI is not considered necessary.
4. (M) indicates that the ADI is derived from microbiological data.
5. TDI means Tolerable Daily Intake. ADIs are not maintained for those agricultural and veterinary chemicals that are no longer permitted for use in agricultural practice. However, residues of certain environmentally persistent pesticides may occur as residues in agricultural commodities as a consequence of past use. In these cases, health intake values are maintained as Tolerable Daily Intake values, to serve as a guideline with which potential dietary intakes of these environmentally persistent chemicals can be compared.
6. 'Deleted' means that an ADI had previously been established but that the chemical is no longer permitted for use on food-producing crops or animals. (For certain environmentally-persistent chemicals which are no longer used in agriculture, see note 5 re TDI values.)

a

Abamectin	0.0005	0.5	10/11/1999
Acephate	0.003	0.22	10/02/1988
Acetamiprid	0.1	9	27/07/2001
Acetyl isovaleryltylosin tartrate	0.0001	0.031 (MIC50)	21/08/2006
Acibenzolar-S-methyl	0.005	5 [LOEL]	23/04/2002
Acifluorfen	0.015	1.5	8/05/1980
Acinitrazole	0.005	10	18/03/1976
Acrolein	0.0005	0.05	15/03/1994
Alachlor	0.0005	0.5	3/05/1985
Albendazole	0.05	5	9/08/1994
Aldicarb	0.001	0.01 (H)	15/12/1999
Aldoxycarb	0.001	1.8	1/08/1985
Aldrin	0.0001 (TDI)	JMPR'94	21/10/2003
Aliphatic alcohol ethoxylates	0.01	20	15/08/1979
Alloxydim-sodium	0.05	5	14/08/1980
Alpha-cypermethrin	0.05	4.7	11/03/1994
Alpha-trenbolone	0.0001	0.01	10/02/1988
Altrenogest	0.000002	0.004	13/08/1992
Ametryn	0.02	2	17/11/1989
Aminocarb	0.02	2	10/02/1969
Aminoethoxyvinylglycine	0.0002	0.2	28/09/2000
Amitraz	0.002	0.25	5/11/1986
Amitrole	0.0003	0.025	3/05/1984
Amoxicillin	0.2	200	8/03/1995
Apramycin	0.05	5	29/05/1986
Ardacin	0.05	100	1/12/1988
Arprinocid	0.002	4	10/11/1977
Asulam	0.02	40	5/12/1985
Atrazine	0.005	0.5	5/12/1990
Avilamycin	1	108	19/12/1997
Azaconazole	0.025	2.5	2/06/1988
Azadirachtin	not established		28/05/2004
Azafenidin	0.0004	0.04	4/07/2001
Azamethiphos	0.003	0.25	29/05/1996
Azaperone	0.1	10	5/08/1983
Azimsulfuron	0.2	18	9/09/2002
Azinphos-ethyl	0.002	0.02 (H)	21/06/1991
Azinphos-methyl	0.025	0.25 (H)	26/08/2002
Azocyclotin	0.003	0.25	10/06/1987
Azoxystrobin	0.1	10	29/09/1998

b

Bacillus thuringiensis	not necessary		6/09/2002
Bacillus thuringiensis subsp. thuringiensis serotype 1 (strain MPPL 002)	not necessary		28/08/2003
Bacitracin	0.1	10	26/05/1997
Bambermycin	0.3	29	14/09/2001
Benalaxyl	0.05	5	1/12/1988
Bendiocarb	0.004	0.4	8/06/1993
Benfluralin	0.05	5	18/02/1987
Benfuresate	0.01	20	10/09/1987
Benomyl	0.02	2.5	12/02/2003
Bensulfuron-methyl	0.02	2.5	10/09/1987
Bensulide	0.04	4	4/02/1982
Bentazone	0.01	10	1/12/1975
Benzofenap	0.004	0.4	27/03/1998
Benzyl G Penicillin	0.03 mg/person/d	JECFA'90(H)	28/02/1990
6-Benzyladenine	0.02	30	15/08/1979
Beta-cyfluthrin	0.01	1.5	5/12/1990
Beta-cypermethrin	0.05	5	19/03/2002
beta-Trenbolone	0.00001	0.001	10/02/1988
Bifenazate	0.01	1	12/12/2002
Bifenthrin	0.01	1	26/11/1992
Binapacryl	0.002	0.25	3/08/1984
Bioresmethrin	0.03	3	20/06/1991
Bitertanol	0.01	1	15/11/1982
Boscalid	0.06	6	15/08/2003
Brodifacoum	0.0000005	0.001	16/05/1990
Bromacil	0.1	10	10/02/1988
Bromadiolone	0.000002	0.004	18/01/1994
Bromide	1	JMPR'88	30/09/1988
Bromophos-ethyl	0.004	0.4	18/02/1987
Bromopropylate	0.03	2.8	31/05/1994
Bromoxynil	0.003	0.3	19/02/1993
Bromsalans	0.007	15	12/08/1970
Bromuconazole	0.02	2	17/06/1994
Brotianide	0.0008	1.7	9/08/1972
Bupirimate	0.05	5	7/06/1978
Buprofezin	0.01	1	18/01/2000
Butacarb	0.2	20	7/12/1972
Butachlor	0.005	10	7/12/1972
Butafenacil	0.004	0.36	12/04/2001
Buthidazole	0.008	15.8	7/06/1978
Butralin	0.2	15	14/08/1992
Butoxydim	0.005	0.5	18/01/1993

C

Cadusafos	0.00001	0.001	13/08/1992
Captan	0.1	10	5/02/1997
Carbaryl	0.008	16 [LOEL]	13/12/2002
Carbendazim	0.03	2.5	9/05/1979
Carbendazole	0.1	10	11/11/1976
Carbetamide	0.03	3	30/08/1991
Carbofuran	0.003	0.33	10/09/1987
Carbophenothion	0.0002	0.02	12/08/1970
Carbosulfan	0.01	1	17/01/1997
Carboxin	0.08	8.5	18/02/1987
Carfentrazone ethyl	0.03	3	3/08/1998
Carprofen	0.005	1	4/09/1997
Ceftiofur sodium	0.03	30	18/01/1993
Cefuroxime sodium	0.4	400	12/08/1996
Cephalexin	0.01	(M)	22/11/2000
Cephalonium	0.02	39	11/07/1996
Cephapirin	0.02	20	5/09/1997
Chloraniformethan	0.03	2.5	14/11/1974
Chlordane	0.0005 (TDI)	JMPR'94	21/10/2003
Chlordimeform	0.003	0.3	10/09/1987
Chlorfenapyr	0.02	2.1	22/08/1995
Chlorfenvinphos	0.0005	0.05	29/10/1998
Chlorfluazuron	0.005	0.56	12/11/1987
Chlorhexidine	0.2	25	14/02/1985
Chloridazon	0.04	4.1	2/12/1988
Chlormequat	0.07	7.5	30/08/1991
Chlornidine	0.002	5	9/08/1972
Chloromethiuron	0.004	0.4	10/09/1987
Chlorothalonil	0.01	1.5	14/02/1991
Chloroxuron	0.004	0.4	14/02/1992
Chlorpropham	0.05	5	16/07/1996
Chlorpyrifos	0.003	0.03 (H)	17/12/1998
Chlorpyrifos-methyl	0.01	0.1	10/02/1988
Chlorsulfuron	0.05	5	5/08/1982
Chlortetracycline	0.003	0.03(H)	15/05/1995
Chlorthal-dimethyl	0.01	1	29/04/1994
Chlorthiophos	0.0002	0.02	7/06/1978
Cinmethylin	0.01	11 [LOEL]	20/08/2003
Clavulanic acid	0.01	10	8/03/1995
Clenpyrin	0.003	5	7/12/1971
Clethodim	0.01	1	20/06/1991
Clodinafop-propargyl	0.004	0.37	28/04/1994
Clofentezine	0.02	2	11/09/1986
Clomazone	0.1	14	19/12/1997
Cloprostenol	0.0005	0.05	11/11/1975
Clopyralid	0.5	50	12/11/1982
Cloquintocet-mexyl	0.04	4	28/04/1994
Clorsulon	0.02	2	11/06/1993
Closantel	0.025	2.5	12/11/1981
Clothianidin	0.05	9.7 [LOEL]	1/08/2003

Cloxacillin	0.2	500	28/06/2001
Cloxylacon	0.002	4.1	11/05/1989
N-coco-1,3-diaminopropane	not necessary		10/12/2003
Colistin sulphate	0.2	25	5/12/1990
Copper	0.2		16/06/2005
Coumaphos	0.0005	0.05	7/12/1971
Coumatetralyl	0.000003	0.0068	15/09/2000
Crotoxyphos	6e-005	0.12	7/06/1972
Crufomate	0.1	JMPR'68	19/08/1974
Cyanamide	0.002	0.2	14/08/1992
Cyanatryn	0.05	5	6/08/1975
Cyanazine	0.002	0.2	11/09/1986
Cyclanilide	0.01	2.5	17/04/1998
Cyclodextrins	deleted		21/10/2003
Cycloprate	0.004	8	9/02/1977
Cycloprothrin	0.01	1	29/05/1986
Cycloxydim	0.06	6.4	17/05/1990
Cyfluthrin	0.02	2.5	14/02/1985
Cyhalofop-butyl	0.002	0.2	28/01/2005
Cyhalothrin	0.02	1.5	14/02/1985
Gamma-cyhalothrin	0.0005	0.5	12/08/2003
Cyhexatin	0.001	0.1	18/01/2000
Cymiazole	0.005	0.5	14/02/1985
Cynmethylin	0.006	12	6/02/1986
Cyometrinil	0.0005	1	5/05/1982
Cypermethrin	0.05	5	10/02/1988
Cyphenothrin	0.03	3	30/08/1991
Cyproconazole	0.01	1	22/02/1990
Cyprodinil	0.02	2.7	19/08/1994
Cyromazine	0.02	1.8	8/04/1998

d

Daminozide	0.7	75	11/09/1986
Dazomet	0.0005	0.5	27/11/1996
2,4-DB	0.004	1.9	16/03/1995
DDT	0.002 (TDI)	0.25	21/10/2003
Decoquinate	0.007	15	11/07/1969
Deltamethrin	0.01	1	6/11/1980
Demeton-S-methyl	0.0003	0.03	30/08/1991
Dexamethasone	0.000015	JECFA'94	10/08/1994
Diafenthuron	0.003	0.3	5/01/1993
Dialifos	0.001	0.01	16/07/1978
Diazinon	0.001	0.02 (H)	29/04/1999
Dicamba	0.03	3	20/06/1991
Dichlobenil	0.01	1.25	14/08/1992
Dichlofluanid	0.03	2.7	29/05/1986
2,4-dichlorophenoxyacetic acid	0.01	1	23/06/2006
Dichlorprop	0.03	3.1	9/07/1998
Dichlorprop-P	0.03	6	2/11/2006
Dichlorvos	0.001	0.014 (H)	6/04/2004
Dichlozoline	0.001	2.5	7/12/1971
Diclazuril	0.03	3	5/12/1990
Diclobutrazol	0.03	2.5	3/08/1984
Diclofop-methyl	0.002	0.25	6/02/1986
Dicloran	0.07	7.5 (H)	16/05/1975
Dicofol	0.001	0.12	5/12/1990
Dicyclanil	0.007	0.7	14/10/2005
Didecyldimethylammonium chloride	0.01	1	25/06/1999
Dieldrin	0.0001 (TDI)	JMPR'94	21/10/2003
Diethofencarb	0.004	7.25	12/11/1987
Difenoconazole	0.01	1	5/12/1990
Difethialone	0.0000006	0.00125	19/07/1993
Diflubenzuron	0.02	2	14/02/1985
Diflufenican	0.2	16.3	11/08/1988
Dimethenamid-P	0.03	5 [LOEL]	12/08/2003
Dimethipin	0.02	2.5	2/06/1988
Dimethirimol	0.2	18	22/02/1972
Dimethoate	0.02	0.2 (H)	10/02/1988
Dimethomorph	0.06	6	12/07/1996
Dimetridazole	deleted		3/09/2003
Diniconazole	0.002	0.4	17/08/1989
Dinitramine	0.1	15	9/05/1974
Dinocap	0.001	0.5	15/01/1993
Dinoprost	0.0005	1	17/03/1976
Diofenolan	0.003	5.6	20/07/1995
Dioxathion	deleted		21/10/2003
Diphacinone	not necessary		4/02/2005
Diphenamid	0.1	10	9/08/1973
Diphenyl	deleted		21/10/2003
Diphenylamine	0.02	1.5	2/06/1988
Diquat	0.002	0.2	28/05/2002

Disulfoton	0.001	0.01	1/12/1969
Dithianon	0.007	0.66	2/02/1993
Dithiopyr	0.005	0.5	13/08/1992
Diuron	0.007	0.7	4/02/2005
Dodecylbenzene sulfonic acid	0.25	25	9/07/1998
Dodine	0.1	10	26/11/2002
Doramectin	0.001	0.1	14/10/2002
Doxycycline hyclate	0.005	10	7/06/1978
2,2-DPA	0.2	15	17/11/1989
DSMA	0.0005	0.5	10/11/1994

e

Efrotomycin	0.5	50	26/09/1989
Emamectin	0.002	0.25	26/02/1999
Endosulfan	0.006	0.6	16/05/1997
Endothal	0.03	3.75	5/12/1990
Endrin	0.0002 (TDI)	JMPR'94	21/10/2003
Enterococcus faecium	not necessary		4/09/2002
Epoxiconazole	0.01	1	16/04/2002
Eprinomectin	0.005	1	13/10/1997
EPTC	0.09	9	12/01/1995
Esbiothrin	0.03	3	15/09/1993
Esfenvalerate	0.008	7.5	17/03/1993
Etaconazole	0.05	5	3/08/1984
Ethametsulfuron-methyl	0.2	21	17/01/2001
1,2-Ethanediamine polymer with (chloromethyl) oxirane and N-methylmethanamine	not necessary		9/12/2003
Ethephon	0.02	0.17(H)	18/02/1987
Ethion	0.001	0.1	10/06/1987
Ethofumesate	0.3	30	11/11/1976
Ethoprophos	0.0003	0.03	11/08/1988
Ethoxyquin	0.001	2.5 [LOEL]	21/02/2000
Ethoxysulfuron	0.06	6.2	12/05/2004
Ethyl formate	3		26/11/2003
Etofenprox	0.03	3.1	15/12/1993
Etoxazole	0.04	4	17/12/2003
Etridiazole	0.03	3	30/08/1991
Etrimfos	0.001	0.1	2/05/1985

f

Famphur	0.00002	0.0375	4/03/1975
Febantel	0.02	2	15/07/1996
Fenamiphos	0.0001	0.014	7/11/2005
Fenarimol	0.01	1	5/12/1990
Fenazaflor	0.02	2.5	8/12/1970
Fenbendazole	0.05	5	14/02/1991
Fenbutatin-oxide	0.01	1	10/09/1987
Fenchlorazole-ethyl	0.03	3	14/02/1992
Fenchlorphos	deleted		21/10/2003
Fenfuram	0.1	10	16/06/1986
Fenhexamide	0.2	17.4	16/12/1998
Fenitrothion	0.002	0.2	6/11/1997
Fenoxaprop-ethyl	0.004	0.4	14/02/1991
Fenoxycarb	0.05	5	29/10/1998
Fenpiclonil	0.01	1.2	20/06/1991
Fenpyroximate	0.005	0.5	24/05/1993
Fensulfothion	0.003	0.025	15/02/1973
Fenthion	0.002	0.02 (H)	30/04/2004
Fentin	deleted		21/10/2003
Fenvalerate	0.02	1.7	10/06/1987
Fipronil	0.0002	0.02	27/06/1994
Firocoxib	not necessary		1/09/2004
Flamprop-methyl	0.001	0.125	29/08/1991
Flavophospholipol	0.3		14/09/2001
Flocoumafen	0.000001	0.0014	20/09/1995
Florasulam	0.05	5	21/06/2006
Florfenicol	0.001	1	3/08/2001
Fluazifop-butyl	0.003	0.3	5/08/1982
Fluazinam	0.004	0.4	18/06/1993
Fluazuron	0.04	4.27	14/09/1993
Fluchloralin	0.003	5.25	15/11/1973
Flucythrinate	0.02	1.6	11/03/1994
Fludioxonil	0.03	3.1	23/04/1997
Flufenoxuron	0.02	2.5	21/01/1997
Flugestone acetate	0.0001	0.2	19/02/1981
Flumethrin	0.003	0.31	18/10/2001
Flumetsulam	1	100	14/02/1992
Flumiclorac pentyl	0.30	32	8/12/2004
Flumioxazin	0.003	3	12/12/2002
Flunixin meglumine	0.006	0.6	29/09/2000
Fluometuron	0.02	2	16/02/1989
Flupropanate	0.002	5	10/09/1987
Fluquinconazole	0.005	0.5	2/07/1997
Fluroxypyr	0.2	20	6/02/1986
Flusilazole	0.002	0.2	18/02/1987
Flutolanil	0.02	2	16/10/2001
Flutriafol	0.01	1	20/06/1991
Fluvalinate	0.005	0.5	5/11/1986
Fluxofenim	0.0005	1	9/08/1994
Forchlorfenuron	0.07	7	15/04/2005

Formetanate	0.004	0.37	25/10/1993
Formothion	deleted		21/10/2003
Fosamine	0.01	25	2/06/1988
Fosetyl aluminium	1	103	18/02/1987
Furathiocarb	0.003	0.35	20/06/1991
Furazolidone	deleted		2/12/2003

g

Gentamicin	0.05	5	6/05/1983
Gibberellic acid	5	550	13/01/1993
Glufosinate	0.007	0.67	11/08/1988
Glufosinate ammonium	0.02	2.1	28/08/2001
Glyoxime	0.001	0.1	7/05/1981
Glyphosate	0.3	30	14/02/1985
Guazatine	0.006	0.625	25/03/1997

h

Halofuginone	0.0003	0.025	16/06/2006
Halosulfuron-methyl	0.01	1	19/11/1993
Haloxyfop	0.0003	0.03	12/11/1987
Heptachlor	0.0005 (TDI)	JMPR'94	21/10/2003
Hexaconazole	0.005	0.5	17/05/1990
Hexaflumuron	0.02	2	31/08/2001
Hexaflurate	0.01	25	16/05/1975
Hexazinone	0.1	10	12/11/1987
Hexythiazox	0.03	3	29/05/1986
Hydroprene	0.5	50	28/10/1994

i

Imazalil	0.03	2.5	24/07/1997
Imazamox	2.8	282	11/03/1999
Imazapic	0.3	137	17/05/1996
Imazapyr	2.5	250	2/06/1998
Imazaquin	0.25	25	18/02/1987
Imazethapyr	2.8	276	22/02/1990
Imidacloprid	0.06	6	8/02/1993
Imidocarb	0.05	5	16/08/1979
Iminoctadine trialbesilate	0.004	0.4	22/12/2004
Imiprothrin	0.05	5	30/09/1996
Indoxacarb	0.01	1	21/08/2006
Iodofenphos	0.0002	0.34	9/05/1974
Iodosulfuron-methyl-sodium	0.03	3	29/09/2000
Ioxynil	0.004	0.04	18/02/1987
Iprodione	0.04	4	16/06/1986
Isocarbophos	0.0002	0.03	16/05/1975
Isoeugenol	0.2	500	20/08/1996
Isofenphos	0.0005	0.05	10/02/1988
Isoxaben	0.05	5	9/08/1995
Isoxaflutole	0.02	2	6/05/1997
Ivermectin	0.001	0.1	16/10/1998

k

Ketoprofen	0.001	0.1	8/12/2000
Kitasamycin	0.5	1000	22/03/1979
Krenite	0.5	1000	5/08/1976
Kresoxim-methyl	0.4	36	25/06/1999

1

Lactobacillus acidophilus	not necessary		4/09/2002
Lactobacillus brevis	not necessary		4/09/2002
Lactobacillus casei	not necessary		4/09/2002
Lactobacillus plantarum	not necessary		4/09/2002
Laidlomycin	0.001	2	2/12/1988
Labdacyhalothrin	0.001	0.1	5/12/1990
Lasalocid	0.001	2	9/02/1977
Lenacil	0.13	12.5	7/12/1972
Leptophos	0.005	0.5	7/12/1972
Levamisole	0.003	6	14/11/1974
Lincomycin	1	100	5/08/1983
Lindane	0.003	0.31	5/11/1986
Linuron	0.01	1.25	11/09/1986
Lufenuron	0.02	2.1	4/03/1994
Lysocellin sodium	0.002	3	14/02/1992

m

Maduramicin	0.001	0.1	5/11/1986
Maldison	0.02	2	12/04/2005
Maleic hydrazide	5	571	5/01/1993
Mancozeb	0.006	0.6	27/11/1992
MCPA	0.01	1.1	28/04/1994
MCPB	0.01	1.1	12/05/1994
Mebendazole	0.08	8	14/02/1975
Mecoprop	0.01	1	3/07/1998
Mecoprop-P	0.04	4	17/01/2001
Mefenpyr-diethyl	0.03	2.8	13/05/1997
Mefluidide	0.25	25	1/12/1988
Melengestrol acetate	0.00005	0.005	6/01/2000
Meloxicam	0.0001	0.125 [LOEL]	5/02/1999
Mepiquat	0.15	15	30/08/1991
Mesosulfuron-methyl	1	100	27/05/2002
Metalaxyl	0.03	3	7/05/1981
Metaldehyde	0.005	5	11/09/1986
Metarhizium Anisopliae var. Acridum (isolate FI-985)	not established		4/09/2003
Methabenzthiazuron	0.004	7.5	22/07/1969
Methacrifos	0.007	0.07	10/06/1987
Methamidophos	0.0003	0.03	30/01/2004
Methazole	0.0004	0.75	10/02/1988
Methfuroxam	0.002	3	10/11/1977
Methidathion	0.002	0.16	31/05/2004
Methiocarb	0.002	0.2	1/03/2000
Methomyl	0.01	1.25	14/02/1991
Methoprene	0.4	35	14/01/2000
Methoxychlor	0.1 (TDI)	JMPR'94	21/10/2003
Methoxyfenozide	0.1	10	12/01/2001
Methyl benzoquat	0.05	100	10/11/1977
Methyl bromide	0.0004	0.4	14/09/2001
1-Methylcyclopropene	not established		10/10/2003
Methylisothiocyanate	0.0004	0.04	26/02/2004
Metiram	0.02	5	10/02/1988
Metobromuron	0.001	2.5	4/03/1971
Metolachlor	0.08	7.5	12/11/1987
Metosulam	0.05	5	18/01/1993
Metribuzin	0.02	2	4/11/1982
Metsulfuron-methyl	0.01	1	1/08/1985
Mevinphos	0.002	0.015 (H)	29/10/1998
Molinate	0.002	0.2	5/11/1986
Monensin	0.01	1.25	10/11/1977
Monocrotophos	0.0003	0.0036	11/06/1998
Morantel	0.01	1.2	26/11/2002
Moxidectin	0.01	1	7/06/2004
MSMA	0.0005	0.5	10/11/1994
Myclobutanil	0.03	2.6	12/11/1987

n

Naled	0.002	0.2	18/02/1987
Naphthalophos	0.0001	0.25	7/12/1971
Napropamide	0.1	11	29/07/1994
Naptalam	0.065	6.5	4/02/1982
Narasin	0.01	1.5	5/08/1983
Neem Limonoids	not established		28/05/2004
Neomycin	0.06	6 (JECFA '96)	28/02/1996
Netobimin	0.004	7.6	10/02/1988
Nicarbazin	2	240	4/11/1982
Nifursol	deleted		2/12/2003
Nimidane	0.001	25	18/03/1976
Nithiamide	0.005	10	18/03/1976
Nitralin	0.24	24	9/08/1972
Nitrothal-isopropyl	0.05	5	19/02/1981
Nitrovin	0.006	12.5	12/11/1981
Nitroxynil	0.02	2	20/08/1974
Norflurazon	0.02	1.5	1/11/1984
Norgestomet	0.0000005	0.001	5/12/1985
Novaluron	0.01	1.1	17/01/2001
Nuclear polyhedrosis virus of helicoverpa armigera occlusion bodies	not necessary		17/12/2003

O

Octadecenoic acid methylester	not necessary		30/10/2000
Octenol	not necessary		15/11/2004
Octhilinone	0.03	60	18/05/1977
n-Octyl bicycloheptene dicarboximide	0.07	7.5	25/05/1995
Oestriol	not necessary		5/02/2004
Ofurace	0.0007	1.3	10/06/1987
Olaquinox	0.06	6	7/05/1981
N-oleyl-1,3-diaminopropane	not necessary		10/12/2003
Omethoate	0.0004	0.04	20/10/2005
ortho-Phenylphenol	0.4	JMPR'99	21/10/2003
Oryzalin	0.1	12	5/05/1982
Oxabetrinil	0.005	10	2/05/1985
Oxadiargyl	0.008	0.8	28/06/1999
Oxadiazon	0.05	5	17/08/1989
Oxadixyl	0.01	1.3	2/06/1988
Oxamyl	0.002	0.2	18/05/1993
Oxfendazole	0.005	0.5	8/10/1990
Oxibendazole	0.01	10	2/06/1998
Oxycarboxin	0.15	15	15/08/1979
Oxyclozanide	0.002	5	18/03/1976
Oxydemeton-methyl	0.0003	0.027	16/12/1997
Oxyfluorfen	0.025	2.5	5/08/1982
Oxytetracycline	0.03	JECFA'98	21/10/2003
Oxythioquinox	0.006	0.6	11/09/1986

p

Paclobutrazol	0.01	1.4	10/02/1988
Paraquat (as cation)	0.004	0.45	27/06/2003
Parathion	0.005	0.05 (H)	4/06/1997
Parathion-methyl	0.0002	0.02	11/06/1997
Pebulate	0.007	0.7	5/12/1990
Penconazole	0.007	0.71	6/02/1986
Pencycuron	0.02	2	23/05/1994
Pendimethalin	0.1	12	18/02/1987
Perfluidone	0.003	5	9/02/1977
Permethrin	0.05	5	29/05/1986
Phenisopham	0.0003	0.5	16/08/1978
Phenmedipham	0.01	1.5	20/06/1991
Phenothrin	0.02	2.5	10/02/1988
Phorate	0.0005	0.05	30/08/1991
Phosalone	0.006	0.625	19/02/1969
Phosmet	0.01	1	12/11/1987
Phosphamidon	deleted		21/10/2003
Phoxim	0.00025	0.025	22/02/1990
Picloram	0.07	7	18/02/1987
Picolinafen	0.007	1.4	1/08/2000
Pinoxaden	0.1	10	29/08/2005
Piperonyl butoxide	0.1	16	20/03/1997
Pirimicarb	0.002	0.4	10/09/1987
Pirimiphos-ethyl	0.0002	5	7/06/1978
Pirimiphos-methyl	0.02	0.25 (H)	30/08/1991
Poloxalene	0.02	40	14/11/1974
Porcine gonadotrophins	not necessary		25/06/2002
Porcine somatotropin	not necessary		29/08/1991
Potassium bicarbonate	not necessary		26/02/2004
Prallethrin	0.02	2.5	18/01/1993
Praziquantel	0.02	20	22/06/1995
Prochloraz	0.01	1	5/08/1982
Proconazole	0.008	16	14/08/1980
Procymidone	0.03	2.5/3.5	13/12/2004
Prodiamine	0.05	5	22/12/1994
Profenofos	0.0001	0.0072	4/02/1982
Profoxydim	0.05	5	29/11/2006
Prohexadione-calcium	0.2	20	23/08/2006
Promacyl	0.2	20	18/05/1977
Prometryn	0.03	3	17/05/1990
Propachlor	0.02	2	11/08/1988
Propamocarb	0.1	10	10/09/1987
Propanil	0.2	20	19/02/1981
Propaquizafop	0.003	0.3	26/11/1992
Propargite	0.002	2	17/06/1999
Propazine	0.02	1.5	16/06/1986
Propetamphos	0.001	0.1	14/02/1985
Propiconazole	0.04	4	5/05/1983
Propineb	0.005	0.5	1/12/1988

Propionibacterium freudenreichii	not necessary		4/09/2002
Propoxur	0.02	0.2	5/11/1986
Propylene oxide	0.006	2.9	24/07/2006
Propylene thiourea	0.0005	0.05	2/12/1988
Propyzamide	0.02	1.9	7/07/1994
Prostianol	0.000005	0.01	12/11/1981
Prosulfocarb	0.02	1.9	21/08/2006
Prothioconazole	0.01	1.1	28/03/2006
Prothiofos	0.0001	0.01	29/10/1993
Prynachlor	0.1	7.9	4/03/1971
Pymetrozine	0.006	0.57	8/12/2000
Pyraclufos	0.001	0.1	29/08/1991
Pyraflufen-ethyl	0.2	20	17/12/2004
Pyrazophos	0.007	0.07 (H)	29/08/1991
Pyrethrum extract	0.04	JMPR'99	21/10/2003
Pyridaben	0.01	1	13/08/1992
Pyridalyl	0.02	2.8	29/04/2004
Pyridate	0.2	18	20/06/1991
Pyrifenox	0.007	0.07 (H)	30/08/1991
Pyrimethanil	0.2	17	1/11/1995
Pyriproxyfen	0.07	7	11/03/1994
Pyriothiobac sodium	0.2	21	18/05/1995
Pyrithione Copper	not necessary		21/07/2004

q

Quinclorac	0.3	35	13/09/2004
Quindoxin	0.0007	1.5	7/12/1972
Quinoxifen	0.2	20	15/01/2002
Quintozene	0.007	0.7	10/09/1987
Quizalofop-ethyl	0.01	1.25	12/11/1987
Quizalofop-P-tefuryl	0.01	1.3	14/11/1996

I

Ractopamine	0.001	0.125	30/07/2002
Resmethrin	0.1	10	11/09/1987
Rimsulfuron	0.02	1.6	24/06/1997
Robenidine	0.005	10	17/09/1997

S

Saccharomyces cerevisiae	not necessary		4/09/2002
Salinomycin	0.01	1	12/11/1981
Secbumeton	0.02	40	7/12/1971
Semduramicin	0.003	0.3	11/06/1997
Sethoxydim	0.18	18	5/08/1982
Siduron	0.025	2.5	2/03/1994
Simazine	0.005	0.5	5/12/1990
Sodium cyanurate	0.5	50	14/01/1998
Somidobove	not necessary		29/08/1991
Spectinomycin	1	100	5/08/1983
Spinosad	0.02	2.4	2/05/1997
Spiramycin	0.75	75	9/02/1978
Spiroxamine	0.02	2.5	2/07/2001
Streptomycin (and dihydrostreptomycin)	0.05	5 (JECFA '97)	28/06/2001
Sulfadiazine	0.02	37.5	20/05/1993
Sulfadimidine	0.02	2	20/05/1993
Sulfadoxine	0.05	50	22/05/1995
Sulfamonomethoxine	0.006	12	20/05/1993
Sulfaquinoxaline	0.01	1	24/07/1997
Sulfatroxazole	0.05	100	15/03/1994
Sulfentrazone	0.05	12	24/07/2006
Sulfometuron-methyl	0.02	2.5	29/08/1991
Sulfosulfuron	0.2	24	19/12/1997
Sulfur dioxide and equivalents (metabisulfites,sulfites,hydrogen sulfites,thiosulfites)	0.7	JECFA'98	28/02/1998
Sulfuryl Fluoride	0.01	20 ppm	25/08/2006
Sulprofos	0.003	0.3	21/03/1979

t

2,4,5-T	deleted		21/10/2003
Tebuconazole	0.01	1.5	16/08/1990
Tebufenozide	0.02	1.8	9/10/1996
Tebufenpyrad	0.002	0.2	15/01/1993
Tebuthiuron	0.07	7	14/02/1985
Tefluthrin	0.005	0.5	30/04/1993
Temephos	0.1	1	10/02/1988
Tepraloxydim	0.05	5	19/05/2002
Terbacil	0.06	6.25	12/11/1987
Terbufos	0.0002	0.0025	26/11/1992
Terbuthylazine	0.003	0.35	4/05/2001
Terbutryn	0.1	10	29/05/1986
Tetrachlorvinphos	0.05	5	7/12/1971
Tetraconazole	0.004	0.4	12/12/2002
Tetradifon	0.02	2	5/12/1990
Tetramethrin	0.02	2	14/08/1992
Tetronasin	0.001	0.1	14/02/1992
Thiabendazole	0.3	3 (H)	2/06/1988
Thiacloprid	0.01	1.2	20/07/2001
Thiamethoxam	0.02	2	14/04/2000
Thidiazuron	0.02	2.5	20/06/1991
Thifensulfuron	0.01	1.25	16/02/1989
Thiobencarb	0.007	0.75	10/11/1977
Thiodicarb	0.03	3	5/08/1983
Thiometon	0.001	0.12	11/05/1989
Thiophanate	0.02	2	5/12/1985
Thiophanate-methyl	0.02	2	30/08/1991
Thiram	0.004	0.4	30/03/1995
Tilmicosin	0.002	4	13/08/1992
Tiocarbazil	0.08	7.5	14/12/1978
Tolclofos-methyl	0.05	5	10/02/1988
Tolfenamic acid	0.005	0.5 (H)	16/01/2001
Toltrazuril	0.01	1	4/01/1993
Tolylfluanid	0.1	12.5	11/12/1998
Tralkoxydim	0.005	0.5	29/08/1991
Transfluthrin	0.003	0.25	16/10/1995
Triadimefon	0.03	2.5	18/02/1987
Triadimenol	0.06	6.25	2/06/1988
Triallate	0.005	0.5	1/12/1988
Triasulfuron	0.005	0.5	14/02/1991
Triazbutil	0.06	6	10/02/1988
Tribenuron-methyl	0.01	0.95	15/04/1994
Trichlorfon	0.002	0.2	29/05/1986
Trichloropyridinol	0.03	3	23/02/1995
Triclabendazole	0.002	0.15	23/05/1996
Triclopyr	0.005	0.5	5/11/1986
Tridemorph	0.02	2	10/02/1988
Trifloxystrobin	0.05	5	29/09/1998
Trifloxysulfuron	0.2	15	19/05/2002
Triflumizole	0.04	4	10/09/1987

Triflumuron	0.007	0.7	2/06/1988
Trifluralin	0.02	2.5	30/08/1991
Triforine	0.02	2.7	10/09/1987
Trimethoprim	0.02	33	20/05/1993
Trinexapac-ethyl	0.01	1.4	14/12/1993
Triticonazole	0.02	2	13/01/1997
Tylosin	0.3	30	15/01/1993

U

Ulocladium oudemansii
Uniconazole-P

not necessary
0.02

1.86

12/12/2003
3/02/2000

V

Vamidotion	0.005	0.05 (H)	8/05/1980
Vernolate	0.01	1	17/08/1989
Vinclozolin	0.01	1.4	16/11/1995
Virginiamycin	0.2	25	10/02/1988

Z

Zeranol	0.0002	0.015	10/02/1988
Zeta-cypermethrin	0.07	7	23/05/1996
Zineb	0.005	5	27/11/1992
Ziram	0.01	1	21/06/1995