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Pesticide residues in food 1995

**Joint FAO/WHO Meeting
on Pesticide Residues**

EVALUATIONS

1995

PART I - RESIDUES

Rome, 1996

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¹ * First evaluation

** Evaluation in CCPR periodic review programme

ABBREVIATIONS WHICH MAY BE USED

Ache	acetylcholinesterase
ADI	acceptable daily intake
AFI(D)	alkali flame-ionization (detector)
ai	active ingredient
ALAT	alanine aminotransferase
approx.	approximate
ASAT	aspartate aminotransferase
BBA	Biologische Bundesanstalt für Land- und Forstwirtschaft
bw	body weight
(not b.w.)	
c	centi- ($\times 10^{-2}$)
CA	Chemical Abstracts
CAS	Chemical Abstracts Services
CCPR	Codex Committee on Pesticide Residues
ChE	cholinesterase
CNS	central nervous system
cv	coefficient of variation
CXL	Codex Maximum Residue Limit (Codex MRL). See MRL.
DFG	Deutsche Forschungsgemeinschaft
DL	racemic (optical configuration, a mixture of dextro- and laevo-)
DP	dustable powder
DS	powder for dry seed treatment
EBDC	ethylenebis(dithiocarbamate)
EC	(1) emulsifiable concentrate (2) electron-capture [chromatographic detector]
ECD	electron-capture detector
EMDI	estimated maximum daily intake
EPA	Environmental Protection Agency
ERL	extraneous residue limit
ETU	ethylenethiourea
F ₁	filial generation, first
F ₂	filial generation, second
f.p.	freezing point
FAO	Food and Agriculture Organization of the United Nations
FDA	Food and Drug Administration
FID	flame-ionization detector
FPD	flame-photometric detector
g (not gm)	gram
µg	microgram
GAP	good agricultural practice(s)
GC-MS	gas chromatography - mass spectrometry
G.I.	gastrointestinal
GL	guideline level

GLC	gas-liquid chromatography
GLP	Good Laboratory Practice
GPC	gel-permeation chromatography
GSH	glutathione
h (not hr)	hour(s)
ha	hectare
Hb	haemoglobin
hl	hectolitre
HPLC	high-performance liquid chromatography
HPLC-MS	high-performance liquid chromatography - mass spectrometry
IBT	Industrial Bio-Test Laboratories
i.d.	internal diameter
i.m.	intramuscular
i.p.	intraperitoneal
IPCS	International Programme on Chemical Safety
IR	infrared
IRDC	International Research and Development Corporation (Mattawan, Michigan, USA)
i.v.	intravenous
JMPR	Joint FAO/WHO Meeting on Pesticide Residues (Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and a WHO Expert Group on Pesticide Residues)
LC	liquid chromatography
LC ₅₀	lethal concentration, 50%
LC-MS	liquid chromatography - mass spectrometry
LD ₅₀	lethal dose, median
LOAEL	lowest observed adverse effect level
LOD	limit of determination (see also "*" at the end of the Table)
LSC	liquid scintillation counting or counter
MFO	mixed function oxidase
μm	micrometre (micron)
min (not min.)	minute(s)
MLD	minimum lethal dose
M	molar
mo	month(s)

(not mth.)	
MRL	Maximum Residue Limit. MRLs include <u>draft</u> MRLs and <u>Codex</u> MRLs (CXLs). The MRLs recommended by the JMPR on the basis of its estimates of maximum residue levels enter the Codex procedure as draft MRLs. They become Codex MRLs when they have passed through the procedure and have been adopted by the Codex Alimentarius Commission.
MS	mass spectrometry
MTD	maximum tolerated dose
n	normal (defining isomeric configuration)
NCI	National Cancer Institute (United States)
NMR	nuclear magnetic resonance
NOAEL	no-observed-adverse-effect level
NOEL	no-observed-effect level
NP(D)	nitrogen-phosphorus (detector)
NTE	neuropathy target esterase
OP	organophosphorus pesticide
PHI	pre-harvest interval
ppm	parts per million. (Used only with reference to the concentration of a pesticide in an experimental diet. In all other contexts the terms mg/kg or mg/l are used).
PT	prothrombin time
PTT	partial thromboplastin time
PTU	propylenethiourea
RBC	red blood cell
s.c.	subcutaneous
SC	suspension concentrate (= flowable concentrate)
SD	standard deviation
SE	standard error
SG	water-soluble granule
SL	soluble concentrate
SP	water-soluble powder
sp./spp.	species (only after a generic name)
sp gr	specific gravity
(not sp. gr.)	
t	tonne (metric ton)
T ₃	tri-iodothyronine
T ₄	thyroxine
TADI	Temporary Acceptable Daily Intake
tert	tertiary (in a chemical name)
TLC	thin-layer chromatography
TMDI	theoretical maximum daily intake
TMRL	Temporary Maximum Residue Limit
TPTA	triphenyltin acetate
TPTH	triphenyltin hydroxide
TSH	thyroid-stimulating hormone (thyrotropin)
UDMH	1,1-dimethylhydrazine (unsymmetrical dimethylhydrazine)
USEPA	United States Environmental Protection Agency

USFDA	United States Food and Drug Administration
UV	ultraviolet
v/v	volume ratio (volume per volume)
WG	water-dispersible granule
WHO	World Health Organization
WP	wettable powder
wt/vol	weight per volume
w/w	weight ratio (weight per weight)
<	less than
≤	less than or equal to
>	greater than
≥	greater than or equal to
*	(following residue levels, e.g. 0.01* mg/kg): level at or about the limit of determination

INTRODUCTION

The report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Toxicological and Environmental Core Assessment Groups (JMPR), held in Geneva, 18-27 September 1995, contains a summary of the evaluations of residues in foods of the various pesticides considered as well as information on the general principles followed by the Meeting. The present document contains summaries of the residues data considered, together with the recommendations made.

The Evaluations are issued in two parts:

Part I: Residues (by FAO)

Part II: Toxicology (by WHO)

For those interested in both aspects of pesticide evaluation, not only both parts but also the reports containing summaries of residue and toxicological considerations will be available. Special attention is drawn to Annex I containing updated ADIs, MRLs, and temporary ADIs and MRLs, which also appears in full as part of the report of the Meeting.

Some of the compounds considered at this Meeting have been previously evaluated and reported on in earlier publications. In general only new information is summarized in the relevant monographs and reference is made to previously published evaluations, which should also be consulted. In the case of older compounds which are re-evaluated as part of the periodic review programme of the Codex Committee on Pesticide Residues (CCPR) however, a comprehensive review of all available data, including data which may have previously been submitted, is carried out. Compounds evaluated for the first time are indicated by a single asterisk and those evaluated in the CCPR periodic review programme by a double asterisk in the Table of Contents.

The name of the compound appearing as the title of each monograph is followed by its Codex Classification Number in parentheses.

References to previous Reports and Evaluations of Joint Meetings are listed in Annex II.

Acknowledgements

The monographs in these Evaluations were prepared by the following participants in the 1995 JMPR for the FAO Panel of Experts on Pesticide Residues in Food and the Environment:

Dr. A. Ambrus, Dr. U. Banasiak, Mr. S. Crossley, Mr. D.J. Hamilton, Mr. N.F. Ives,
Dr. F.-W. Kopisch-Obuch, Mr. A.F. Machin, Ms. E. Masoller, Dr. D. Murphy and Mr. T. Sakomoto.

Note: Any comments on residues in food and their evaluation should be addressed to the:

Plant Protection Service
Plant Production and Protection Division
Food and Agriculture Organization
Viale delle Terme di Caracalla
00100 Rome, Italy

CORRECTIONS TO REPORT OF 1995 JMPR

Attention is drawn to two errors in the report of the 1995 Meeting.

(1). FENTHION, p. 121, para 6.

Change

The Meeting concluded that the data supported an increase in the maximum residue level and estimated a maximum level of 1 mg/kg to replace the previous estimate of 0.05 mg/kg.

to

Although the use pattern and data suggested a maximum residue level of 1 mg/kg, the Meeting could not support this value on the basis of the risk assessment conducted.

The Meeting, therefore, recommended withdrawal of the existing CXL for milks (0.05mg/kg, FV).

The incorrect version was from a superseded draft. The recommendation to withdraw the CXL is correctly recorded in Annex I of both the Report and Evaluations.

(2). FENARIMOL, AnnexI, p. 213.

Change the recommended MRL for DF 0269 Dried grapes from 0.1 To **0.2 T** mg/kg.

The figure is correctly recorded in the text of the Report (p. 76) and in Annex I to these Evaluations.

