

# Generally Expected Levels (GELs) for Metal Contaminants

## ADDITIONAL GUIDELINES

to maximum levels in Standard 1.4.1 – Contaminants and Natural Toxicants

July 2001

### Contents

Background.....	2
What has changed? .....	3
Purpose.....	3
What are GELs?.....	4
Table 1: GELs for Metal Contaminants .....	5
Where can I get more information? .....	6

## Background

**In this user guide, the ‘old Code’ means Volume 1 of the *Food Standards Code* (the *Australian Food Standards Code*). The ‘new Code’ means Volume 2 of the *Food Standards Code* (the *Australia New Zealand Food Standards Code*). The ‘New Zealand regulations’ means the *New Zealand Food Regulations 1984*.**

In adopting the new Code in November 2000, the Ministerial Council agreed to a two-year transition period. After this, the new Code will replace both the old Code and the New Zealand regulations.

During this two-year phase-in period, foods in Australia may comply with either the old Code or the new Code (but not a combination of these). In New Zealand, foods may comply with the old Code or the new Code or the New Zealand regulations (but not a combination of these).

After this, the old Code and New Zealand regulations will be repealed and all food sold in Australia and New Zealand will have to comply with the new Code.

The new Code will mean changes in the way manufacturers and retailers make and present food for sale.

The Australia New Zealand Food Authority (ANZFA) has developed this user guide in consultation with Australian and New Zealand government and industry representatives. It provides manufacturers, retailers and food officers with additional information to that contained in Standard 1.4.1 – Contaminants and Natural Toxicants in the new Code.

This user guide, unlike the standard itself, is not legally binding. If in any doubt about interpreting the standards, you should seek independent legal advice.

As well as complying with food standards requirements, you must also continue to comply with other legislation. In Australia, this legislation includes the *Trade Practices Act 1974*, the *Imported Food Control Act 1992*, and State and Territory Fair Trading Acts and Food Acts. In New Zealand, this legislation includes the *Food Act 1981* and *Fair Trading Act 1986*.

## What has changed?

The old Code sets maximum levels (MLs) for metal contaminants in food. As part of the process of developing the new Code, ANZFA conducted scientific, risk-based assessments to determine whether or not to retain these maximum levels. The assessment indicated that many of the current MLs were not justified on public health and safety grounds. Where this was the case, they have not been included in the new Code.

To bridge the information gap that may result from their removal, **generally expected levels (GELs)** have been introduced for certain metal contaminants to help manufacturers maintain the lowest achievable levels of contaminants in food.

GELs were established only for those contaminant/commodity combinations where the safety assessment indicated a low level of risk to the consumer and where adequate data were available.

Unlike MLs, GELs are not legally enforceable, but they provide a benchmark against which to measure contaminant levels in food. GELs should be considered in conjunction with Standard 1.4.1 – Contaminants and Natural Toxicants in the new Code.

GELs can be considered for other commodities in the future, provided adequate data are supplied to ANZFA.

## Purpose

Standard 1.4.1 – Contaminants and Natural Toxicants in the new Code specifies the maximum levels of contaminants and natural toxicants that are permitted in the foods listed in the standard. All foods listed in the standard must comply with the maximum levels set out in the standard.

In addition to these standards ANZFA has developed GELs. These are a range of contaminant levels that would normally be expected in particular foods, and are listed in Table 1.

## What are GELs?

GELs are presented in Table 1. They are expressed as two percentiles—a median and a 90th percentile.

50% of samples in each group have a value less than the median value in Table 1.

90% of samples have a value less than the 90th percentile value shown in Table 1.

If your sample has a higher value than the value shown in the table for the 90th percentile, it means your sample has a value higher than 90% of all the other samples in the test group.

In these cases it would be wise to investigate further to determine whether or not your samples have consistently high values and whether or not you can find an explanation for this/these high values, and investigate how you can change management to reduce the recorded level.

Information used to establish GELs was provided by the:

- Australian Government Analytical Laboratories
- National Residue Survey
- Metals in Meat Survey (produced by the Bureau of Resource Sciences)
- Queensland Health Food Surveillance Program, and
- WA Health Department.

The number of samples for each commodity from which GELs were derived is also included in the table. The criteria for GELs were established in consultation with Australian and New Zealand government representatives.

**Table 1: GELs for Metal Contaminants**

Metal	Food Category	Proposed GELs (mg/kg)		Sample size
		Median	90th percentile	
Antimony	Edible offal of cattle, pigs and sheep	0.005*	0.05	388
	Meat of cattle, pigs and sheep	0.005*	0.05	179
Arsenic (total)	Edible offal of cattle, pigs and sheep	0.02	0.1	841
	Liver of chicken	0.2	1	53
	Meat of cattle, pigs and sheep	0.01	0.02	421
Copper	Crustacea	10	20	359
	Edible offal of cattle and pigs (other than sheep liver)	5	50	717
	Sheep liver	85	150	133
	Fish	0.5	2	226
	Meat of cattle, pigs and sheep	1	2	439
	Molluscs	5	30	234
	Wheat	5	10	120
Mercury	Edible offal of cattle, pigs and sheep	0.01	0.01	841
	Meat of cattle, pigs and sheep	0.01	0.01	423

Selenium	Crustacea and molluscs	0.5	1	119
	Edible offal of cattle, pigs and sheep	1.0	2	841
	Fish	0.5	2	53
	Meat of cattle, pigs and sheep	0.1	0.2	421
Zinc	Crustacea	25	40	70
	Edible offal of cattle, pigs and sheep	35	60	841
	Fish	5	15	62
	Meat of cattle, pigs and sheep	60	75	433
	Oysters**	130	290	20

\*Limit of detection (LOD) reported because result was below the LOD of the test method, i.e. <0.005.

\*\*In the case of zinc in oysters—for which there is a proposed discontinuation of the maximum level (ML)—it was considered preferable to nominate a GEL despite the available data points numbering less than 50.

## Where can I get more information?

For more information on the new standards call the:

### Standards Information Unit

**1300 652 166** (Australia)

**0800 441 571** (New Zealand), or

Email: [advice@anzfa.gov.au](mailto:advice@anzfa.gov.au)

A more detailed discussion paper entitled *The Establishment of Guideline Levels for Contaminants (Metals) in Food: Generally Expected Levels* is available from the ANZFA website: [www.anzfa.gov.au](http://www.anzfa.gov.au)