Methods of Analysis for Food

User guide on Methods of Analysis for Food

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After this, the old Code and New Zealand regulations will be repealed and all food sold in Australia and New Zealand will have to comply with the new Code.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

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

Purpose

This guide will help analysts to choose appropriate methods of analysis for food where these are not specified in the new Code.

What has changed?

The old Code and the New Zealand regulations contained various methods of analysis. These analytical methods were generally prescribed to provide guidance rather than to help protect public health and safety or to prevent fraud and deception. Since the overall purpose of the standards in the new Code is to protect public health and safety and to prevent fraud and deception, their inclusion as prescribed methods in the new Code could not be justified. Therefore in producing the new Code, many of the methods of analysis found in previous regulations were excluded.

Analytical methods were retained in the new Code only where they were unique to Australian or New Zealand standards and not published elsewhere, or where they define the analyte being tested. All other methods of analysis were excluded from the new Code, creating a need for this user guide, which lists recommended analytical methods for particular foods.

Please note that the analytical methods listed below are for guidance only and analysts may choose to use other methods than those recommended below.

Methods of analysis included in the new Code

A total of four analytical methods have been retained in the new Code. Three were retained because they are unique to Australian and New Zealand standards and one because it defines the analyte being tested.

The three methods of analysis contained in the new Code because they are unique to Australian or New Zealand regulations and are not published elsewhere are:

- a sampling plan for mercury in fish;
- determination of fluid in a package of frozen poultry; and
- determination of the pH of meat.

The method of analysis contained in the new Code because it defines the analyte being tested is:

- the method for determination of dietary fibre.

Clause 6 of Standard 1.4.1 – Contaminants and Natural Toxicants contains the sampling plan for mercury in fish.

The schedule to Standard 2.2.1 – Meat and Meat Products contains the method for determining fluid in a package of frozen poultry.

The schedule to Standard 1.6.2 – Processing Requirements contains the method for determining the pH of meat.

Clause 18 of Standard 1.2.8 – Nutrition Information Requirements contains the method for determining dietary fibre.

Guidance on methods of analysis not included in the new Code

To provide guidance for analysts in cases where analytical methods are not given in the new Code, ANZFA has compiled a list of recommended methods for analysis of food, organised by commodity group (see table below). The list is not exhaustive; further information is available from the Association of Official Analytical Chemists (AOAC) and from Standards Australia.

Commodity group	**Method of analysis**	**Reference**
Baking compounds and baking powder	Determination of the neutralising value of acid phosphatase powder or phosphatase aerator.	Section 8.010, AOAC, 14th edn, 1984.
Cereals, legumes, flours, meals and breads	Determination of crude fibre in bread.	Section 950.37, AOAC, 16th edn, 1997.
	Determination of crude fibre in flour.	Section 920.86, AOAC, 16th edn, 1997.
	Determination of crude fibre in grains.	Section 945.38, AOAC, 16th edn, 1997.
Cheese and cheese products	Determination of lactose in cheese.	Standards Australia AS 2300, *Methods of Chemical and Physical Testing for the*

Commodity group	Method of analysis	Reference
		and Physical Testing for the Dairying Industry.
Cocoa and cocoa products	Determination of crude fibre in cocoa mass.	Section 962.09, AOAC, 15th edn, 1990.
	Determination of crude fibre in chocolate.	Section 930.20(b) AOAC, 15th edn, 1990 (in accordance with Section 962.09, AOAC, 15th edn, 1990).
	Determination of cocoa mass in chocolate and other cocoa products.	Section 962.09, AOAC, 15th edn, 1990.
	Determination of starch in cocoa mass, cocoa and cocoa products.	Section 920.84, AOAC, 15th edn, 1990 (refers to Section 12.043), AOAC, 10th edn.
Colourings	Absence of polycyclic hydrocarbons in carbon black (vegetable carbon/vegetable black).	Compendium of Food Additive Specifications, Volume 2 (1992) Joint FAO/WHO Expert Committee on Food Additives, pp. 1579–80.
Fish	Determination of the level of histamine.	Section 977.13, AOAC, 15th edn, 1990.
	Determination of the level of paralytic shellfish poison.	Section 959.08, AOAC, 15th edn, 1990.

Commodity group	Method of analysis	Reference
	Determination of the level of demoic acid.	Section 991.26, AOAC, 15th edn, 1990, 2nd Supplement, 1991.
Flavourings and flavour enhancers	Determination of 3,4-benzopyrene in smoke flavouring.	Section 21.001–21.009, AOAC, 14th edn, 1984.
Fruit juice	Determination of essential oils.	Section 22.088–22.089 and 19.127, AOAC, 13th edn, 1980.
General	Determination of gluten in foods.	Section 32.991, 2nd Supplement, AOAC, 15th edn, 1990.
Jam and related products	Determination of the quantity of soluble solids.	Section 22.024 (referred to in Section 31.011), AOAC, 14th edn, (1984).
Milk and liquid milk products	Determination of the freezing point of milk.	Standards Australia AS 2300.2.4, *Determination of the Freezing Point of Milk—Modified Hortvet Method* or Standards Australia AS 2300.2.5, *Determination of the Freezing Point of Milk—Thermistor Method.*

Commodity group	Method of analysis	Reference
	Determination of the concentration of antibiotics in milk.	Standards Australia AS 1766.3.11–1991, *Estimation of Penicillin in Milk (Disc Method Assay)*
	Determination of phosphatase activity of pasteurised milk and pasteurised liquid milk products.	Standards Australia AS 2300, *Methods of Chemical and Physical Testing for the Dairying Industry.*
Sugar and sugar products	Sugar colour.	International Commission for the Uniform Methods of Sugar Analysis.
Tomato concentrate	Natural tomato soluble solids.	Section 32.014–32.016, AOAC, 13th edn, 1980.
Tomato products	Determination of the mould count in tomato products.	Section 44.206–44, AOAC, 14th edn, 1984.
Tomato sauce	Mould count.	*Howard Method*, Section 44.209, AOAC, 14th edn, 1984.

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**

See also

Association of Official Analytical Chemists (AOAC): http://www.aoac.org/

Standards Australia: http://www.standards.com.au/