



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING**

**44th Session**

**Virtual**

**5 – 8 May and 14 May 2025**

**ENDORSEMENT OF METHODS OF ANALYSIS AND SAMPLING PLANS  
FOR PROVISIONS IN CODEX STANDARDS**

1. This document contains the methods of analysis (Appendix I) proposed by the 44th session of the Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU44):<sup>1</sup>

- Methods of analysis for dietary fibre at the Table of conditions for claims of *Guidelines for use of nutrition and health claims* ([CXG 23-1997](#)).
- Methods for provisions in follow-up formula ([CXS 156-1987, Section A](#)) and infant formula ([CXS 72-1981, Section A](#)).
- Measurement of crude protein in Follow-up formula.

Methods of analysis for dietary fibre at the Table of conditions for claims of *Guidelines for use of nutrition and health claims* (CXG 23-1997).

2. CCNFSDU44 agreed to request CCMAS to endorse AOAC 2022.01/ICC Standard 191/AACC 32-61.01 as Type I for the determination of insoluble and soluble dietary fibres of higher and lower molecular weight in food that may or may not contain resistant starches. A footnote as follows should be inserted (Appendix I, Part A.1):

Isolated, purified, and/or synthetic fibres captured by AOAC 2022.01/ICC Standard 191/AACC 32-61.01 that do not meet the Codex definition of dietary fibre in the *Guidelines on nutrition labelling* (CXG 2-1985) should be subtracted from the final measurement, where deemed appropriate by competent authorities.

3. CCMAS44 is invited to:

- consider and endorse the methods of analysis in Appendix I, Part A.1; and
- as a consequence, revoke AOAC 2011.25/AACC 32-50.01 for use with the same provision (Appendix I, Part A.2).

Methods for provisions in follow-up formula (CXS 156-1987, Section A) and infant formula (CXS 72-1981, Section A)

4. CCNFSDU44 agreed to request CCMAS to:

- endorse the methods listed in Table 1 for review, (re)typing, revocation and endorsement as Type II/Type III methods for the determination of nutrients in infant formula (CXS 72-1981, Section A) and follow-up formula (CXS 156-1987, Section A) (see Appendix I, Part A.2); and
- consider revoking/retyping of methods for follow-up formula currently listed in CXS 234-1999 as follows (see Appendix I, Part B):
  - retype/revoke AOAC 992.24 for iodine;
  - retype/revoke AOAC 974.29, AOAC 992.04, AOAC 992.06 for vitamin A; and
  - retype AOAC 992.07 for pantothenic acid

Measurement of crude protein in Follow-up formula

5. CCNFSDU44 agreed to request CCMAS to endorse the method for crude protein in follow-up formula as Type I method (see Appendix I, Part A.2).

6. CCMAS44 is invited to consider and endorse the methods of analysis in Appendix I, Part A. 2 and Part B.

<sup>1</sup> [REP24/NFSDU](#), para 177 and Appendix VII, Part A. 1

## APPENDIX I

## CODEX COMMITTEE ON NUTRITION AND FOODS FOR SPECIAL DIETARY USES (CCNFSDU44)

## Matters related to methods of analysis

Part A: Methods of analysis for endorsement and inclusion in [CXS 234-1999](#)

## A.1 Method for dietary fibre

Table 4. Methods of analysis for dietary fibre: *Guidelines for use of nutrition and health claims (CXG 23-1997)*: Table of conditions for claims

General methods that measure both the higher (monomeric units > 9) and the lower molecular weight fraction (monomeric units <=9)				
Standard	Provisions	Method	Principle	Type
All foods	Method applicable for determining the content of insoluble and soluble dietary fibres of higher and lower molecular weight. The method is applicable in food that may, or may not, contain resistant starches.	AOAC 2022.01/ AACC 32-61.01/ ICC Standard No. 191*	Enzymatic- Gravimetry High Pressure Liquid Chromatography	I

\*Isolated, purified, and/or synthetic fibres captured by AOAC 2022.01/ICC Standard 191/AACC 32-61.01 that do not meet the Codex definition of dietary fibre in the *Guidelines on nutrition labelling (CXG 2-1985)* should be subtracted from the final measurement, where deemed appropriate by competent authorities.

## A.2 Methods for provisions in follow-up formula and infant formula

Commodity	Provision	Method	Principle	Type
Follow-up formula	Vitamin A	AOAC 2012.10 / ISO 20633	HPLC-UV	II
	Vitamin E	AOAC 2012.10 / ISO 20633	HPLC	II
	Vitamin D	AOAC 2016.05 / ISO 20636	LC-MS	II
	Thiamine	AOAC 2015.14 / ISO 21470	Enzymatic digestion and UHPLC-MS/MS	II
	Riboflavin	AOAC 2015.14 / ISO 21470	Enzymatic digestion and UHPLC-MS/MS	II
	Niacin	AOAC 2015.14 / ISO 21470	Enzymatic digestion and UHPLC-MS/MS	II
	Vitamin B <sub>6</sub>	AOAC 2015.14 / ISO 21470	Enzymatic digestion and UHPLC-MS/MS	II
	Vitamin B <sub>12</sub>	AOAC 2011.10 / ISO 20634	HPLC	II
		AOAC 2014.02	LC-UV	III
	Pantothenic acid	AOAC 2012.16 / ISO 20639	UHPLC-MS/MS	II
	Folic Acid	AOAC 2011.06 / ISO 20631	LC-MS/MS	II
	Vitamin C	AOAC 2012.22 / ISO 20635	HPLC-UV	II
	Biotin	AOAC 2016.02 / ISO 23305	HPLC-UV	II
	Iron	AOAC 2015.06 / ISO 21424   IDF 243	ICP-MS	II
AOAC 2011.14 / ISO 15151   IDF 229		ICP emission spectroscopy	III	
Calcium	AOAC 2015.06 / ISO 21424   IDF 243	ICP-MS	II	

Commodity	Provision	Method	Principle	Type
		AOAC 2011.14 / ISO 15151   IDF 229	ICP emission spectroscopy	III
	Phosphorus	AOAC 2015.06 / ISO 21424   IDF 243	ICP-MS	II
		AOAC 2011.14 / ISO 15151   IDF 229	ICP emission spectroscopy	III
	Magnesium	AOAC 2015.06 / ISO 21424   IDF 243	ICP-MS	II
		AOAC 2011.14 / ISO 15151   IDF 229	ICP emission spectroscopy	III
	Sodium	AOAC 2015.06 / ISO 21424   IDF 243	ICP-MS	II
		AOAC 2011.14 / ISO 15151   IDF 229	ICP emission spectroscopy	III
	Chloride	AOAC 2016.03 / ISO 21422   IDF 242	Potentiometry	II
	Potassium	AOAC 2015.06 / ISO 21424   IDF 243	ICP-MS	II
		AOAC 2011.14 / ISO 15151   IDF 229	ICP emission spectroscopy	III
	Manganese	AOAC 2015.06 / ISO 21424   IDF 243	ICP-MS	II
		AOAC 2011.14 / ISO 15151   IDF 229	ICP emission spectroscopy	III
	Iodine	AOAC 2012.15 / ISO 20647   IDF 234	ICP-MS	II
	Selenium	AOAC 2011.19 / ISO 20649   IDF 235	ICP-MS	II
	Copper	AOAC 2015.06 / ISO 21424   IDF 243	ICP-MS	II
		AOAC 2011.14 / ISO 15151   IDF 229	ICP emission spectroscopy	III
	Zinc	AOAC 2015.06 / ISO 21424   IDF 243	ICP-MS	II
		AOAC 2011.14 / ISO 15151   IDF 229	ICP emission spectroscopy	III
	Total nucleotides	AOAC 2011.20 / ISO 20638	LC	II
	Choline	AOAC 2015.10 / ISO 21468	UHPLC-MS/MS	II
	Myo-inositol	AOAC 2011.18 / ISO 20637	LC-pulsed amperometry	II
	L-carnitine	AOAC 2015.10 / ISO 21468	UHPLC-MS/MS	II
	Total amino acids (excluding taurine and tryptophan) for use according to section 3.1.3 (a) notes 2) and 3) of CXS 156-1987	AOAC 2018.06 / ISO 4214   IDF 254 / AACC 07-50.01	UHPLC-UV	II
	Tryptophan	AOAC 2017.03	HPLC	II
	Total fatty acids	AOAC 2012.13 / ISO 16958   IDF 231	Gas chromatography	II
	Crude protein	ISO 8968-1   IDF 20-1	Titrimetry (Kjedahl)	I
Infant formula	Folic acid	AOAC 2011.06/ISO 20631	LC-MS/MS	II

**Part B: Methods of Analysis included in CXS 234-1999 for revocation or retyping****B.1 Methods for provisions in follow-up formula for revocation or retyping**

Commodity	Provision	Method	Principle	Type	Note
Follow-up formula	Vitamin A	AOAC 992.04	HPLC	II	Retype or revoke
		AOAC 992.06	HPLC	III	Retype or revoke
		AOAC 974.29	Colorimetry	IV	Retype or revoke
	Pantothenic acid	AOAC 992.07	Microbioassay	# III	Retype
	Iodine	AOAC 992.24	Ion-selective potentiometry	#-III	Retype or revoke

**B.2: Methods for dietary fibre for revocation**

General methods that measure both the higher (monomeric units > 9) and the lower molecular weight fraction (monomeric units <=9)				
Standard	Provisions	Method	Principle	Type
All foods	Method applicable for determining the content of insoluble and soluble dietary fibres of higher and lower molecular weight. The method is applicable in food that may, or may not, contain resistant starches.	AACC Intl 32-50.01 AOAC 2011.25	Enzymatic-Gravimetry High Pressure Liquid Chromatography	I

**Part C: proposal to include the nitrogen to protein conversion factors for follow-up formula for older infants and product for young children in the annex in CXS 234-1999 (for information by CCMAS)**

Follow-up formula for older infants and product for young children<sup>1</sup>: The calculation of the protein content of the final product ready for consumption should be based on N x 6.25, unless a scientific justification is provided for the use of a different conversion factor for a particular product. The protein levels set in this standard are based on a nitrogen conversion factor of 6.25. For information the value of 6.38 is used as a specific factor appropriate for conversion of nitrogen to protein in other Codex standards for milk products.

<sup>1</sup> \*Other equivalent names for this product are "Drink for young children with added nutrients", or "Product for young children with added nutrients", or "Drink for young children"