



GENERAL ASPECTS OF INVOLVEMENT OF AOAC INTERNATIONAL IN CODEX PROCEEDINGS

2nd Symposium of the AOAC Arab Section
W Amman, Hashemite Kingdom of Jordan
May 7-8, 2024 (virtual presentation)

Katerina Mastovska, Ph.D.
Deputy Executive Director & Chief Science Officer
AOAC INTERNATIONAL

INTERNATIONAL ORGANIZATION WITH 15 REGIONAL SECTIONS



North American:

- **Atlantic US**
- **Canada**
- **Midwest US**
- **Pacific US**
- **Southern US**

Latin American & Caribbean

VISION: Global alignment for trusted analytical solutions

MISSION: Advance food safety and product integrity through standards, validated test methods, and laboratory quality programs

- **Africa**
- **Arab**
- **Europe**
- **Lowlands**
- **China**
- **India**
- **Japan**
- **Southeast Asia**
- **Taiwan**

Codex Alimentarius



CODEX ALIMENTARIUS (“FOOD CODE”)

Collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission (CAC)

CODEX ALIMENTARIUS
INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of the
United Nations



World Health
Organization

CODEX ALIMENTARIUS MANDATE



PROTECT
the health
of consumers



ENSURE
fair practices
in food trade



PROMOTE
coordination of all
food standards work

CODEX 
CODEX ALIMENTARIUS 1963-2023

In Food & Agriculture, We Set the Standard

Codex Core Texts



❑ **Standards** (237) – EXAMPLES:

- CXS 234-1999: Recommended Methods of Analysis and Sampling (CCMAS)
- CXS 1-1985: General Standard for the Labelling of Prepackaged Foods (CCFL)
- CXS 72-1981: Standard for Infant Formula and Formulas for Special Medical Purposes Intended for Infants (CCNFSDU)
- CXS 192-1995: General Standard for Food Additives (CCFA)
- CXS 193-1995: General Standard for Contaminants and Toxins in Food and Feed (CCCF)
- CXS 349-2022: Standard for Berry Fruits (CCFFV)

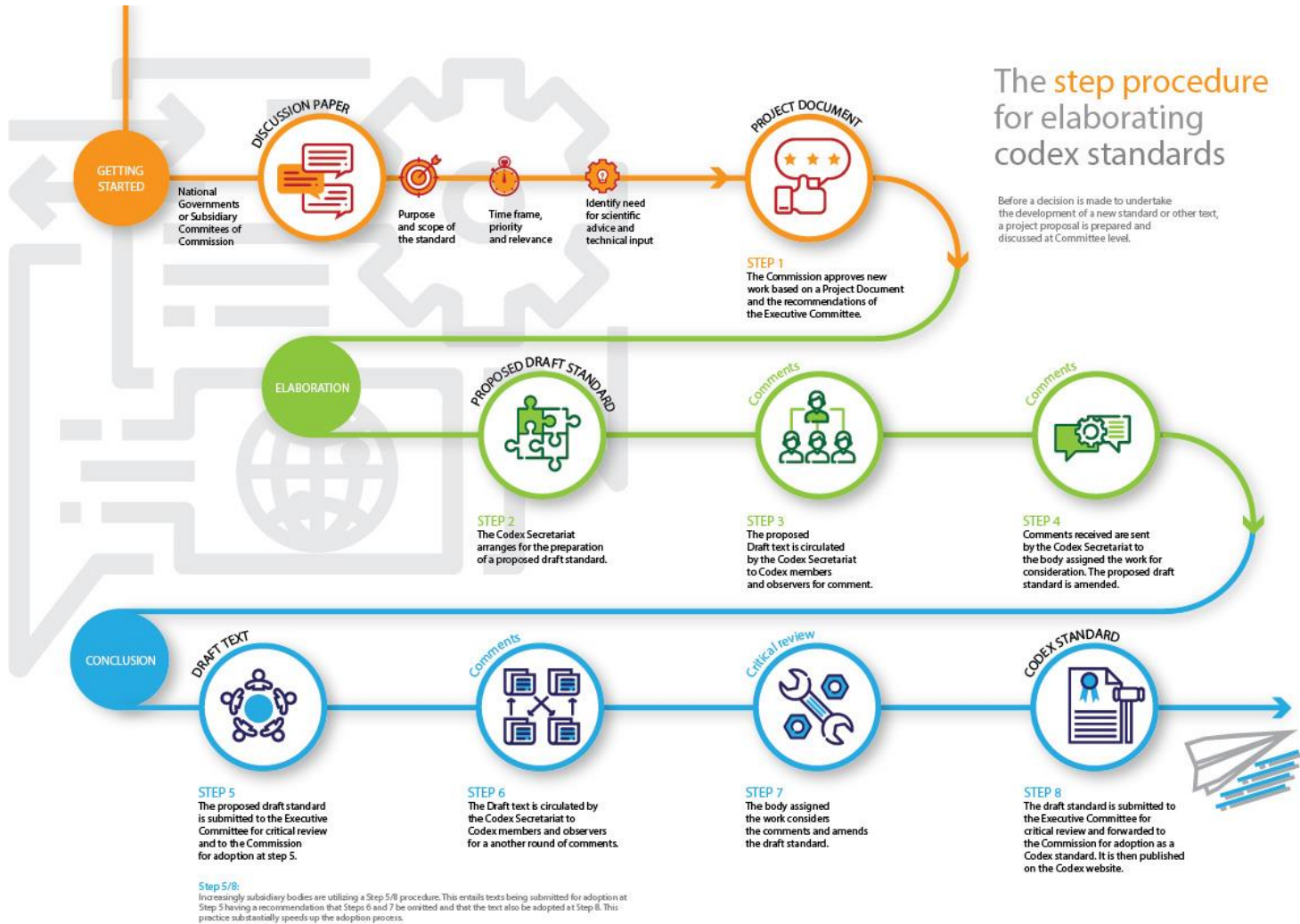
❑ **Guidelines** (87) – EXAMPLES:

- CXG 72-2009 : Guidelines on Analytical Terminology (CCMAS)
- CXG 70-2009: Guidelines for Settling Disputes on Analytical (Test) Results (CCMAS)
- CXG 50-2004: General Guidelines on Sampling (CCMAS)
- CXG 2-1985: Guidelines on Nutrition Labelling (CCFL)

❑ **Codes of Practice** (57) – EXAMPLES:

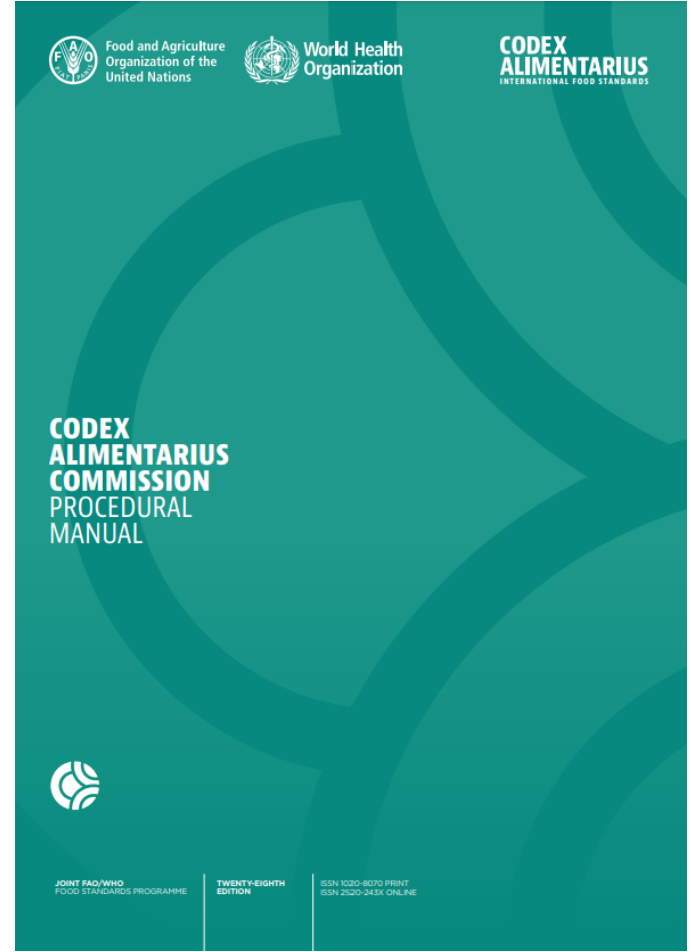
- CXC 1-1969: General Principles of Food Hygiene (CCFH)
- CXC 78-2017: Code of Practice for the Prevention and Reduction of Mycotoxins in Spices (CCCF)
- CXC 80-2020: Code of Practice on Food Allergen Management for Food Business Operators (CCFH)

Codex Standard Development



The step procedure for elaborating codex standards

Before a decision is made to undertake the development of a new standard or other text, a project proposal is prepared and discussed at Committee level.



Codex Committees

Codex Alimentarius Commission (CAC)

Executive Committee

Secretariat

HORIZONTAL
General Subject
Committees

VERTICAL
Commodity Committees

REGIONAL
FAO/WHO Coordinating
Committees



FAO/WHO Coordinating Committees



REGIONAL COMMITTEES

FAO/WHO Coordinating Committees

CCAFRICA	FAO/WHO Coordinating Committee for Africa
CCASIA	FAO/WHO Coordinating Committee for Asia
CCEURO	FAO/WHO Coordinating Committee for Europe
CCLAC	FAO/WHO Coordinating Committee for Latin America and the Caribbean
CCNASWP	FAO/WHO Coordinating Committee for North America and the South West Pacific
CCNE	FAO/WHO Coordinating Committee for Near East



Commodity Committees

VERTICAL COMMITTEES (ACTIVE)

Commodity Committees

CCFFP	Codex Committee on Fish and Fishery Products
CCFFV	Codex Committee on Fresh Fruits and Vegetables
CCFO	Codex Committee on Fats and Oils
CCSCH	Codex Committee on Spices and Culinary Herbs

STANDARDS FOR SPECIFIC COMMODITIES



General Subject Committees

HORIZONTAL COMMITTEES (ACTIVE)

General Subject Committees

CCCF	Codex Committee on Contaminants in Foods
CCFA	Codex Committee on Food Additives
CCFH	Codex Committee on Food Hygiene
CCFICS	Codex Committee on Food Import and Export Inspection and Certification Systems
CCFL	Codex Committee on Food Labelling
CCGP	Codex Committee on General Principles
CCMAS	Codex Committee on Methods of Analysis and Sampling
CCNFSDU	Codex Committee on Nutrition and Foods for Special Dietary Uses
CCPR	Codex Committee on Pesticide Residues
CCRVDF	Codex Committee on Residues of Veterinary Drugs in Foods



Codex Members and Observers



Codex Alimentarius Commission

189 Codex Members:

188 Member Countries

1 Member Organization (EU)

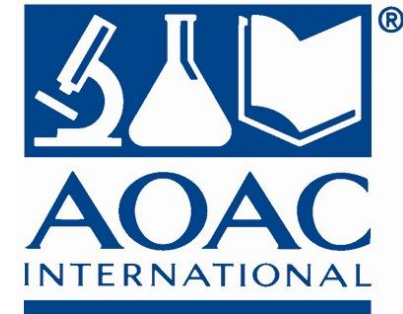


240 Codex Observers:

60 Intergovernmental Organizations (IGOs)

164 International Non-governmental Organizations (NGOs)

16 United Nations Organizations



Codex NGO Observer

AOAC's Role in Codex


- ❑ AOAC Official Methods included in Codex Standard CXS 234-1999: Recommended Methods of Analysis and Sampling (CCMAS)
- ❑ Development of new AOAC Standards and Official Methods for (existing) Codex provisions
- ❑ Submission of AOAC Official Methods for endorsement
- ❑ Advisory role on Codex provisions, methods, requirements, guidelines, procedures etc.
- ❑ Participation in Codex committee meetings and working groups
- ❑ Participation in CCMAS Inter-Agency Meeting (IAM)




Codex Standard 234-1999




RECOMMENDED METHODS OF ANALYSIS AND SAMPLING



 INTERNATIONAL FOOD STANDARDS


 Food and Agriculture Organization of the United Nations


 World Health Organization

E-mail: codex@fao.org - www.codexalimentarius.org

RECOMMENDED METHODS OF ANALYSIS AND SAMPLING

CXS 234-1999

Adopted in 1999.

This document is amended yearly. Last amendment: 2023*

* The most updated version of the method should be used, in application of ISO/IEC 17025. The present list of methods reflects the amendments adopted by the Forty-sixth Session of the Codex Alimentarius Commission in 2023.

CXS 234-1999 16

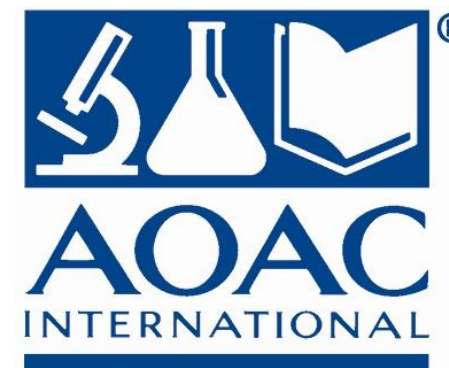
Fish and fishery products				
Commodity	Provision	Method	Principle	Type
Fish and fishery products	Histamine	AOAC 977.13	Fluorimetry	II
Fish and fishery products	Mercury	AOAC 977.15	Flameless atomic absorption spectrophotometry	III
Fish and fishery products: canned products	Drained weight	Described in the standard	Weighing	I
Fish and fishery products: canned products	Net weight	Described in the standard	Weighing	I
Boiled dried salted anchovies	Sodium chloride (chloride expressed as sodium chloride)	AOAC 937.09	Titrimetry	II
Canned shrimps or prawns	Size, determination of	Described in the standard	Number per 100 g	I
Fish sauce	Total nitrogen	AOAC 940.25	Digestion	I
Fish sauce	Amino acid nitrogen	AOAC 920.04 and AOAC 920.03	Determining formaldehyde titration method Subtracting by ammoniacal nitrogen (magnesium oxide method)	I
Fish sauce	pH	AOAC 981.12 The pH shall be measured in a sample of fish sauce diluted with water to 1:10 using a pH metre. The dilution of fish sauce is necessary because of the high ionic strength in the undiluted sauce	Electrometry	III
Fish sauce	Sodium chloride	AOAC 976.18	Potentiometry	II
Fish sauce	Sodium chloride	AOAC 937.09	Titrimetry	IV
Fish sauce	Histamine	AOAC 977.13	Fluorimetry	II
Frozen abalone (covered by glaze)	Net weight	AOAC 963.18	Gravimetry	I
Frozen fish and fishery products	Thawing and cooking procedures	Described in the standards	Thawing and heating	I

Codex Standard 234-1999



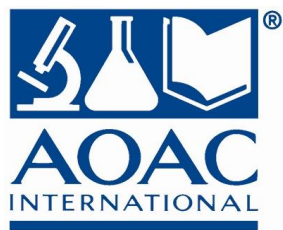
RECOMMENDED METHODS OF ANALYSIS AND SAMPLING – INFANT FORMULA

Analyte	Standard/Method	Codex Type
Amino acids	AOAC 2018.06 / ISO 4214 IDF 254 / AACC 07-50.01	II
Biotin	AOAC 2016.02 / ISO DIS 23305	II
Carnitine	AOAC 2015.10 / ISO 21468	II
Carotenoids	AOAC 2016.13 / ISO 23443	II
Chloride	AOAC 2016.03 / ISO 21422 / IDF 242	II
Choline	AOAC 2015.10 / ISO 21468	II
Fatty acids	AOAC 2012.13 / ISO 16958 / IDF 231	II
Folic acid	AOAC 2011.06 / ISO in FDIS	II
FOS	AOAC 2016.14 / ISO 22579 / IDF 241	II
Inositol	AOAC 2011.18 / ISO 20637	II
Iodine	AOAC 2012.15 / ISO 20647 / IDF 234	II
Minerals & Trace Elements	AOAC 2011.14 / ISO 15151 / IDF 229	III
Minerals & Trace Elements	AOAC 2015.06 / ISO 21424 / IDF 243	II
Nucleotides	AOAC 2011.20 / ISO 20638	II
Pantothenic acid	AOAC 2012.16 / ISO 20639	II
Tryptophan	AOAC 2017.03	II
Ultra Trace Minerals (Cr/Mo/Se)	AOAC 2011.19 / ISO 20649 / IDF 235	II
Vitamin A	AOAC 2012.10 / ISO 20633	II
Vitamins B ₁ , B ₂ , B ₃ , B ₆	AOAC 2015.14 / ISO 21470	II
Vitamin B ₁₂	AOAC 2011.10 / ISO 20634	II
Vitamin B ₁₂	AOAC 2014.02	III
Vitamins C	AOAC 2012.22 / ISO 20635	II
Vitamin D	AOAC 2016.05 / ISO 20636	II
Vitamin E	AOAC 2012.10 / ISO 20633	II
Vitamin K ₁	AOAC 2015.09 / ISO 21446	II
Whey Protein Casein Ratio	AOAC 2016.15 / ISO 23293 / IDF 247	II



**STAKEHOLDER PROGRAM
ON INFANT FORMULA AND
ADULT NUTRITIONALS**

AOAC SPIFAN and Codex



Collaboration with other SDOs



Endorsement by Codex Committees



Codex Committee on Nutrition
and Foods for Special Dietary Uses



Codex Committee on Methods of Analysis
and Sampling

CODEX COMMITTEE ON NUTRITION AND FOODS FOR SPECIAL DIETARY USES

Terms of Reference:

- (a) to **study specific nutritional problems** assigned to it by the Commission and **advise the Commission on general nutrition issues**;
- (b) to **draft general provisions**, as appropriate, **concerning the nutritional aspects of all foods**;
- (c) to **develop standards, guidelines or related texts for foods for special dietary uses**, in cooperation with other committees where necessary; and,
- (d) to **consider**, amend if necessary, and **endorse provisions on nutritional aspects** proposed for inclusion Codex standards, guidelines and related texts.



AOAC and CCNFSDU



CODEX COMMITTEE ON NUTRITION AND FOODS FOR SPECIAL DIETARY USES

Examples of recent and planned involvement of AOAC INTERNATIONAL:

- ❑ SPIFAN methods for nutrients in infant formula – CCNFSDU37-CCNFSDU43 (2015-2023)
- ❑ SPIFAN methods for nutrients in foods for special medical purposes (FSMPs) – CCNFSDU44 (2024)
- ❑ AOAC methods for dietary fiber – CCNFSDU44 (2024)
- ❑ CRD on Methods of analysis to measure sweetness (AOAC, IDF, ISO): “...*there are no known validated methods to measure sweetness of carbohydrate sources [as an estimation of sweetness in a complex matrix,] and therefore no way to determine compliance for such a provision.*” – CCNFSDU43 (2023)
- ❑ CCNFSDU eWG on Appropriate methods for assessing the sweetness of carbohydrate sources in “Product for young children”
- ❑ CCNFSDU eWG on Optional ingredients in the infant formula standard



AOAC and CCNFSDU



CODEX COMMITTEE ON NUTRITION AND FOODS FOR SPECIAL DIETARY USES



Invited presentations by AOAC INTERNATIONAL delegation representatives at CCNFSDU43

AOAC STAKEHOLDER PROGRAM FOR INFANT FORMULA AND ADULT NUTRITIONALS



- Update AOAC Official Methods of Analysis
- Engage global partners, harmonize standards
- Advocate Global acceptance and use of newly approved standard methods

In Food & Agriculture, We Set the Standard



Darryl Sullivan

EXPECTED ANALYTICAL RESULTS FOR VITAMIN D RELATED TO METHOD PRECISION FOR PRODUCT MANUFACTURED AT MIDPOINT OF EU REGULATORY RANGE

In Food & Agriculture, We Set the Standard



Erik Konings

CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING

Terms of Reference:

- (a) to **define the criteria** appropriate to Codex Methods of Analysis and Sampling;
- (b) to **serve as a coordinating body for Codex with other international groups** working in methods of analysis and sampling and quality assurance systems for laboratories;
- (c) to **specify**, on the basis of final recommendations submitted to it by the other bodies referred to in (b) above, **Reference Methods of Analysis and Sampling** appropriate to Codex Standards which are generally applicable to a number of foods;
- (d) to **consider, amend**, if necessary, and **endorse**, as appropriate, **methods of analysis and sampling** proposed by Codex (Commodity) Committees, except that methods of analysis and sampling for residues of pesticides or veterinary drugs in food, the assessment of micro biological quality and safety in food, and the assessment of specifications for food additives, do not fall within the terms of reference of this Committee;
- (e) to **elaborate sampling plans and procedures**, as may be required;
- (f) to **consider specific sampling and analysis problems** submitted to it by the Commission or any of its Committees; and,
- (g) to **define procedures, protocols, guidelines or related texts for the assessment of food laboratory proficiency**, as well as quality assurance systems for laboratories.



AOAC and CCMAS



CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING

Examples of recent involvement of AOAC INTERNATIONAL:

- ❑ SPIFAN methods for nutrients in infant formula – CCMAS37-CCMAS42 (2016-2023)
- ❑ Participation in CCMAS eWGs:
 - Discussion paper on methods of analysis for precautionary allergen labelling
 - Testing methods related to nitrates and nitrites
 - Review of methods of analysis in CXS 234 - workable package - review of methods in the fish and fishery products
 - Review of Methods of Analysis in CXS 234 - Cereals, pulses, legumes and derived products workable package
 - Discussion paper on Listing of Type IV methods in CXS 234 when a Type I method is listed for the same commodity and provision



Inter-Agency Meeting (IAM)

- ❑ Informal group of **standards development organizations (SDOs)** associated with CCMAS
- ❑ Meets before the CCMAS meeting and as needed
- ❑ AOAC INTERNATIONAL (Darryl Sullivan) has assumed IAM's vice-chair role
- ❑ Promotes **coordination** and **cooperation** among SDOs
- ❑ Addresses problems that require international **collaboration**
- ❑ Assists CCMAS in an **advisory role**
- ❑ Collaborates on **position documents**



Examples of recent CRDs led by AOAC INTERNATIONAL:

- CCMAS Nodal Committee for ALL analytical methods with Codex provisions (CCMAS40, 2019)
- IAM comments on the e-WG findings concerning the adoption of Type IV methods in CXS 234 when a Type I method is listed for the same commodity and provision (CCMAS43, 2024)

AOAC at Codex Meetings in 2024



CCMAS43
May 13-18, 2024
Budapest, Hungary



CCNFSDU44
2-6 October, 2024
Dresden, Germany



Codex Committee on Methods
of Analysis and Sampling

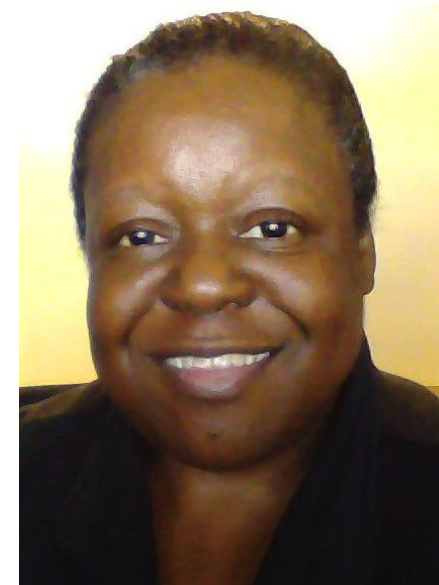


Codex Committee on Nutrition
and Foods for Special Dietary Uses

Acknowledgement



Darryl Sullivan (Eurofins Scientific)
Erik Konings (Nestle)
Dustin Starkey (Abbott Nutrition)



Deborah McKenzie
Deputy Assistant Executive Director &
Chief Standards Officer, AOAC INTERNATIONAL

Stay Informed

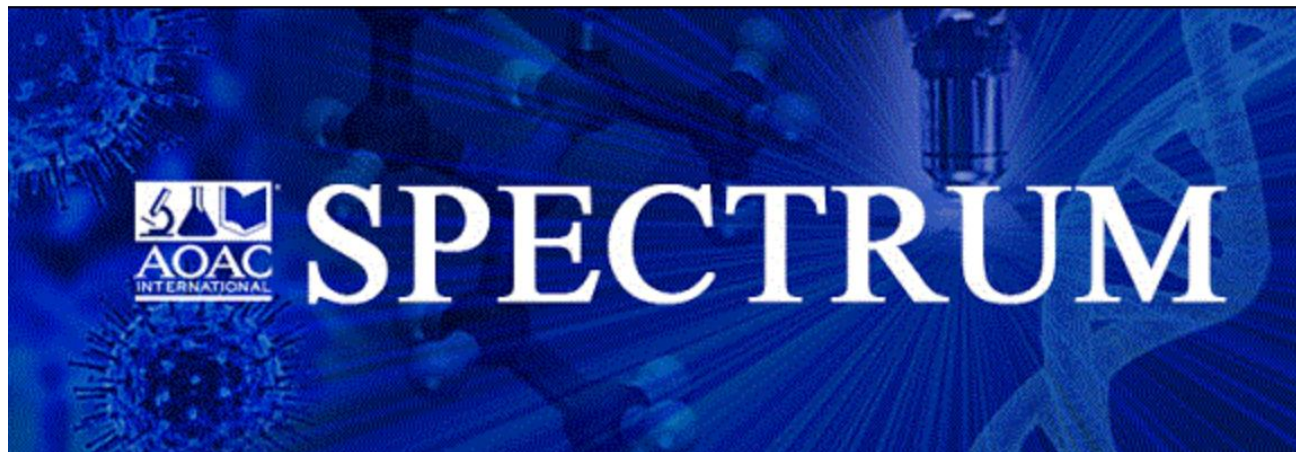


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ANY QUESTIONS?

kmastovska@aoac.org



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