Tema 1, 2, 3.1, 3.11, 3.2, 3.3, 4.1, 4.2, 8, 9, 10 de la agenda **CRD28 REV**

ORIGINAL LANGUAGE ONLY

PROGRAMA CONJUNTO FAO/OMS SOBRE NORMAS ALIMENTARIAS

COMITÉ DEL CODEX SOBRE MÉTODOS DE ANÁLISIS Y TOMA DE MUESTRAS

Cuadragésima tercera reunión
Budapest, Hungria

13-18 de mayo de 2024

(Preparado por Chile)

Tema de la agenda 1: Aprobación del programa

Contexto:

Programa orden del día

Posición país:

Se está de acuerdo con el orden del día, modificaciones al orden del día no serían inconvenientes que pudieran afectar la posición país de Chile.

Tema de la agenda 2: Asuntos remitidos al Comité por la Comisión del Codex Alimentarius y sus órganos auxiliares

Contexto:

- **Asuntos específicos**

Normas y textos afines adoptados

1. La Comisión del Codex Alimentarius (en adelante la Comisión), en su 46.º período de sesiones (2023), adoptó:

i. los métodos de análisis y criterios de rendimiento propuestos en relación con las disposiciones de normas del Codex a efectos de su inclusión en la norma CXS 234–1999;

ii. los planes de muestreo para las aflatoxinas totales en determinados cereales y productos a base de cereales, incluidos los alimentos para lactantes y niños pequeños a efectos de su inclusión en la norma CXS 193-1995;

iii. la revisión de las Directrices generales sobre muestreo (CXG 50-2004).

Normas y textos afines revocados

2. La Comisión, en su 46.º período de sesiones, revocó lo siguiente:

i. Disposiciones sobre métodos de análisis en las normas del Codex pertinentes y en la norma CXS 234–1999.

ii. El documento Métodos de análisis generales para los contaminantes (CXS 228-2001).

Otras cuestiones

3. En el 46.º período de sesiones de la Comisión, el Presidente del Comité del Codex sobre Métodos de Análisis y Toma de Muestras (CCMAS) recordó la decisión de elaborar una base de datos para los métodos de análisis y muestreo como medio de hacer más accesibles los resultados del Comité, y pidió apoyo adicional a los miembros y a la Secretaría del Codex para poder iniciar su desarrollo.

- **Asuntos generales**

Labor futura del Codex

4. Consideraciones sobre el Plan estratégico del Codex para 2026-2031 con el fin de guiar la dirección futura del Codex y considerar, paralelamente, un modelo de trabajo para la labor futura del Codex;

Posición país:

Sin comentarios, los comentarios específicos se darán en el tema particular de la agenda.

Tema de la agenda 3.1: Ratificación de métodos de análisis: CCSCH y CCFO

Contexto:

Revisión y opnión técnica sobre métodos propuestos para tipificación por:

- Comité del Codex sobre Especias y Hierbas Culinarias (CCSCH): las Norma para el jengibre seco o deshidratado (CXS 343-2021), Norma para los clavos de olor (CXS 344-2021), Norma para la albahaca seca (CXS 345-2021), Norma para el azafrán (CXS 351-2021) y Norma para el chile y pimentón secos o deshidratados (CXS 353-2022). Así como Cardamomo pequeno, pimienta Jamaica, bayas y anis estrelado y cúrcuma.
- Comité del Codex sobre Grasas y Aceites (CCFO) (REP24/FO)2 o Métodos de análisis revisados de las disposiciones de la Norma para los aceites de oliva y los aceites de orujo de oliva (CXS 33-1981). Métodos de análisis de las disposiciones de la Norma para aceites de pescado (CXS 329-2017).

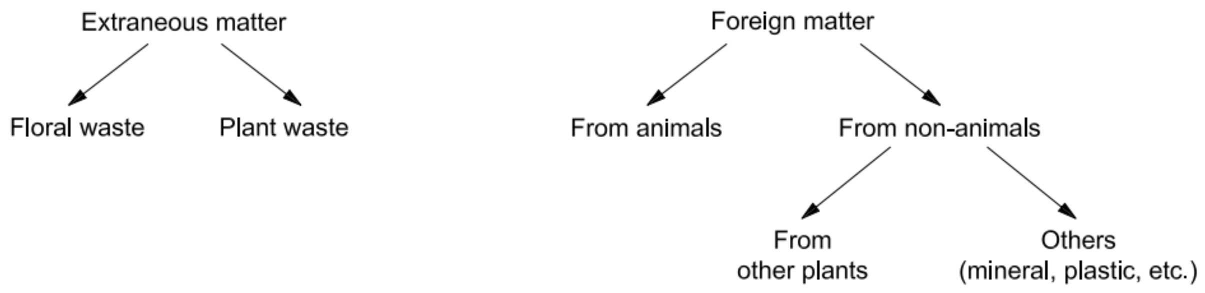
Posición país:

METHODS OF CODEX COMMITTEE ON SPICES AND CULINARY HERBS (CCSCH)

In relation to the analysis methods presented for approval by CCSCH7 (2024) and CCFO28 (2024) and the performance criteria for processed fruits and vegetables, the following comments are made.

The ISO 927 method in "Figure 1 - Illustrated definitions" establishes the definition of extraneous matter and foreign matter, based on the method that the CCSCH proposes to classify as I, there are other provisions that according to ISO 927 are included and are not condiec classify another method as type I for the same provision.

Figure 1- Illustred definitions in ISO 927:



Based on this definition, it is understood as a foreign matter and foreign matter, as follows:

1. **Extraneous matter:** all visible matter that is waste species belonging to the plant to which the spice or herb belongs.
   - floral waste: e.g. petals, separated styles, stamen, pollen grains and ovary parts.
   - Plant waste: parts of the plant not desired for food e.g. stems, unwanted branches, thorns
2. **Foreing matter:** all matter visible that is not part of the plant to which the spice or herb belongs.
   - From animals: e.g. living insects, dead insects, excreta, hair, fragments of insects, contamination from rodents.
   - From non-animals: from other plants e.g. vegetable matters, leaves, stems, straw, and the other types e.g. mould, minerals, glass, metals fragments, plastic, papers.

This is consistent with the definitions that this committee has indicated in several of its standards, for example in that of pepper (CXS 326), in which it states:

- *Extraneous vegetative matter – Vegetative matter associated with the plant from which the product originates – but is not accepted as part of the final product. Light berries, pinheads or broken berries are not considered as extraneous matter.*
- *Foreign matter – Any visible objectionable foreign detectable matter or material not usually associated with the natural components of the spice plant; such as sticks, stones, burlap bagging, met.*

In this sense, the scope is made that different methods that are already included in the definition of foreign or foreign matter should not be classified as type I.

Appendix I
Part B

***Methods of analysis for provisions in the* Draft Standard for spices derived from dried or dehydrated fruits and berries – small cardamom**

Commodity	Provision	Method	Principle	Type	Comments to Chile
Small cardamom	Moisture	ISO 939	Distillation	I	according to method and classification. It is suggested to include the AOAC 941.11method that has the same principle (distillation), AOAC is requested to evaluate its equivalence with the proposed ISO 939 method.
Small cardamom	Total Ash, on dry basis	ISO 939 and ISO 928	Distillation and Gravimetry	I	according to method and classification
Small cardamom	Acid Insoluble Ash, on dry basis	ISO 939 and ISO 930	Distillation and Gravimetry	I	according to method and classification
Small cardamom	Volatile Oil on dry basis	ISO 939 and ISO 6571	Distillation followed by Volumetry	I	according to method and classification
Small cardamom	Volatile Oil on dry basis	AOAC 927.17	Distillation followed by Volumetry	II or III	It is suggested to include the AOAC method for this product, since it is validated for cardamom, white, anise, black pepper, pepper, turmeric and other species. It is suggested to include it as type II or III.
Small cardamom	Extraneous Matter (included Immature and shrivelled capsules)	ISO 927	Visual Examination ~~followed by~~ and Gravimetry	I	To avoid confusion, it is suggested to include the provision of Immature and shriveled capsules in parentheses and avoid duplicating concepts. It is agreed to classify Type I.
Small cardamom	Foreign Matter (from animals: Insect defiled/infested, Mammalian or/and Other excreta and from non-animals: Mould visible)	ISO 927	Visual Examination ~~followed by~~ and Gravimetry	I	To avoid confusion, it is suggested to include the provision of insects in parentheses and avoid duplicating concepts. It is agreed to classify Type I.
Small cardamom	~~Insect defiled/infested~~	~~ISO 927~~	~~Visual Examination followed by and Gravimetry~~	~~I~~	According to ISO 927, insects are part of foreign matter, which is why they could not be classified as type I.
Small cardamom	Extraneous Matter from waste plan: Immature and shrivelled capsules	ISO 882-1	Visual Examination ~~followed by~~ and Gravimetry	~~I~~II or III	according to ISO 927, are considered foreign matter, so if ISO 927 is already

					approved, ISO 882-1 should be approved as type II or III.
Small cardamom	Foreing Matter from animals: Mammalian or/and Other excreta	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macroanalytical Procedure Manual) MPM: V-8. Spices https://www.fda.gov/food/laboratory-methods-food/mpm-v-8-spices-condiments-flavors-and-crude-drugs	Visual Examination ~~followed by~~ and Gravimetry	~~I~~ II or III	according to ISO 927, are considered foreign matter, so if ISO 927 is already approved, Method V-8 FDA should be approved as type II or III.
Small cardamom	~~Mould visible~~	~~ISO 927~~	~~Visual Examination followed by and Gravimetry~~	~~I II~~	According to ISO 927, insects are part of foreign matter, which is why they could not be classified as type I.
Small cardamom	Extraneous Matter from waste plan: Empty and malformed capsules	ISO 882-1	Visual Examination ~~followed by~~ and Gravimetry	~~I~~ II or III	according to ISO 927, are considered foreign matter, so if ISO 927 is already approved, ISO 882-1 should be approved as type II or III.
Small cardamom	Whole insect live/dead	ISO 927 (For whole) (is for commodity or provision this indication?)	Visual Examination ~~followed by~~ and Gravimetry	I	There cannot be 2 type I methods for the same provision and merchandise, so it must be clarified whether the mention in the ISO 927 (For Whole) refers to commodity for Whole or to Whole insect live/died
Small cardamom	Whole insect live/dead	AOAC 975.49 (For powdered/pieces) (is for commodity or provision this indication?)	Floatation ~~followed by~~ and Gravimetry	I	There cannot be 2 type I methods for the same provision and merchandise, so it must be clarified whether the mention in the AOAC 975.49 (For powdered/pieces) refers to Smalll cardamon for For powdered/pieces or to For powdered/pieces of Whole insect live/died.
Small cardamom	Light seeds	IS 1907*	Visual Examination ~~followed by~~ and Gravimetry	III	according to method and classification

*IS 1907 is a method ~~of analysis based on~~ Indian standard.

***Methods of analysis for provisions in the* Draft Standard for spices derived from dried or dehydrated fruits and berries -allspice, juniper berry and star anise**

~~Product Name~~ Commodity	Provision	Method	Principles	Type	Comments to Chile
Allspice Juniper berries Star anise	Moisture	ISO 939	Distillation	I	according to method and classification
Allspice Juniper berries Star anise	Total ash on dry basis	ISO 939 and ISO 928	Distillation and Gravimetry.	I	according to method and classification
Allspice Juniper berries Star anise	Acid- insoluble on dry basis	ISO 939 and ISO 930	Distillation and gravimetry	I	according to method and classification
Allspice Juniper berries Star anise	Volatile oils on dry basis	ISO 939 and ISO 6571	Distillation ~~followed by~~ and volumetry	I	according to method and classification
Allspice Juniper berries Star anise	Volatile Oil on dry basis	AOAC 927.17	Distillation followed by Volumetry	II or III	It is suggested to include the AOAC method for this product, since it is validated for cardamom, white, anise, black pepper, pepper, turmeric and other species. It is suggested to include it as type II or III.
Allspice Juniper berries Star anise	Extraneous matter	ISO 927	Visual Examination ~~followed by~~ and Gravimetry	I	according to method and classification
Allspice Juniper berries Star anise	Foreign matter (Whole dead insects and live insects, insects fragments, insect defiled and mould visible)	ISO 927	Visual Examination ~~followed by~~ and Gravimetry	I	To avoid confusion, it is suggested to include the provision of insects in parentheses and avoid duplicating concepts. It is agreed to classify Type I.
Allspice Juniper berries Star anise	~~Mould visible~~	~~ISO 927~~	~~Visual Examination followed by and Gravimetry~~	~~I~~	Is foreing matter
Allspice Juniper berries Star anise	Foreing Matter from animals: Mammalian or/and Other excreta	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macroanalytical Procedure Manual) MPM: V-8. Spices https://www.fda.gov/food/laboratory-methods-food/mpm-v-8-	Visual Examination ~~followed by~~ and Gravimetry	~~I~~ II or III	according to ISO 927, are considered foreign matter, so if ISO 927 is already approved, Method V-8 FDA should be approved as type II or III.

		spices-condiments-flavors-and-crude-drugs			
Allspice Juniper berries Star anise	~~Whole dead insects and live insects~~	~~ISO 927~~	~~Visual examination~~	~~I~~	Is foreing matter
Allspice Juniper berries Star anise	~~Insect fragments~~	~~ISO 927~~	~~Visual examination~~	~~I~~	Is foreing matter
Allspice Juniper berries Star anise	Insect fragments	AOAC 975.49 (For powdered/pieces)	Flotation ~~method~~	~~I~~ II or III	according to ISO 927, are considered foreign matter, so if ISO 927 is already approved, AOAC 974.49 should be approved as type II or II. remove the word "method" from the principle. clarify if (For powdered/pieces) is for provision or commodity
Allspice Juniper berries Star anise	~~Insect defiled~~	~~ISO 927~~	~~Visual examination followed by gravimetry~~	~~I~~	Is foreing matter
Allspice Juniper berries Star anise	Rodent hair	AOAC 965.40	Flotation	~~I~~ II or III	according to ISO 927, are considered foreign matter, so if ISO 927 is already approved, AOAC 965.40 should be approved as type II or II.

***Methods of analysis for provisions in the* Draft Standard for dried or dehydrated roots, rhizomes and bulbs - turmeric**

Commodity	Parameter	Method	Principle	Type	Comments to Chile
Tumeric	Moisture	ISO 939	Distillation	I	according to method and classification
Tumeric	Total Ash on dry basis	ISO 939 and ISO 928	Distillation and gravimetry	I	according to method and classification
Tumeric	Acid Insoluble Ash on dry basis	ISO 939 and ISO 930	Distillation and gravimetry	I	according to method and classification
Tumeric	Curcuminoids content on dry basis (Colouring power)	ISO 2825 and ISO 5566	Spectrophotometry	I	according to method and classification
Tumeric	Extraneous Matter	ISO 927	Visual Examination ~~followed by~~ and Gravimetry	I	according to method and classification
Tumeric	Foreign Matter (Whole insects Live /dead, Insect defiled,	ISO 927	Visual Examination ~~followed by~~ and Gravimetry	I	according to ISO 927, are considered foreign matter

	Mammalian or/and Other excreta, mould visible)				
Tumeric	~~Insect defiled.~~	~~ISO 927~~	~~Visual Examination followed by and Gravimetry~~	~~I~~	according to ISO 927, are considered foreign matter
Tumeric	~~Whole insects Live /dead~~	~~ISO 927 (for whole)~~	~~Visual Examination followed by and Gravimetry~~	~~I~~	according to ISO 927, are considered foreign matter
Tumeric	Whole insects Live /dead	AOAC 975.49 (For powdered/ pieces)	Visual Examination ~~followed by~~ and Gravimetry	I	according to ISO 927, are considered foreign matter
Tumeric	Foreing Matter from animals: Mammalian or/and Other excreta	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macroanalytical Procedure Manual) MPM: V-8. Spices https://www.fda.gov/food/laboratory-methods-food/mpm-v-8-spices-condiments-flavors-and-crude-drugs	Visual Examination ~~followed by~~ and Gravimetry	~~I~~ II or III	according to ISO 927, are considered foreign matter, so if ISO 927 is already approved, Method V-8 FDA should be approved as type **II** or **III**.
Tumeric	~~Mould visible~~	~~ISO 927~~	~~Visual Examination followed by and Gravimetry~~	~~I~~	according to method and classification

CODEX COMMITTEE ON FATS AND OILS (CCFO)

***Methods of analysis and sampling for provisions in* Proposed draft revision to the Standard for Olive Oils and Olive Pomace Oils (CXS 33-1981)**

Chile is according to method and classification in general

8. METHODS OF ANALYSIS AND SAMPLING

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
Olive oils and olive pomace oils	Absorbency in ultra-violet	COI/T.20/Doc. No. 19 / ISO 3656 / AOCS Ch 5-91	Absorption in ultra-violet	I	according to method and classification
Olive oils and olive pomace oils	Acidity, free (acid value)	ISO 660 / AOCS Cd 3d-63 / COI/T.20/Doc. No 34	Titrimetry	I	according to method and classification
Olive oils and olive pomace oils	~~Alpha~~ α-tocopherol	ISO 9936	HPLC (UV or FLD ~~fluorescence~~)	II	according to method and classification
Olive oils and olive pomace oils	~~Alpha~~ α-tocopherol	AOCS Ce 8-89	HPLC (UV or FLD ~~fluorescence~~)	III	according to method and classification

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
Olive oils and olive pomace oils	Difference between the actual and theoretical ECN 42 triglyceride content	COI/T.20/Doc. No~~.~~ 20 and COI/T.20/Doc. No 33	HPLC (Analysis of triglycerides) ~~by HPLC~~ and by GC followed by calculation (fatty acids)	I	according to method and classification
Olive oils and olive pomace oils	1,2 Diglycerides	COI/T.20/Doc. No 32[1]	Gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Erythrodiol + uvaol	ISO 29822[1]	Gas chromatography (FID)	III	No comments
Olive oils and olive pomace oils	Erythrodiol + uvaol	COI/T.20/Doc. No 26	~~Separation and g~~Gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Fatty acid composition	COI/T.20/Doc. No 33	Gas chromatography (FID) of methyl esters	II	according to method and classification
Olive oils and olive pomace oils	Fatty acid composition	AOCS Ce 2-66 and AOCS Ch 2-91 / Ce 1h-05	Gas chromatography (FID) of methyl esters	III	according to method and classification
Olive oils and olive pomace oils Fatty acid composition	Fatty acid composition	ISO 12966-2 and ISO 12966-4	Gas chromatography (FID) of methyl esters	III	No comments
Olive oils and olive pomace oils	2-glyceryl monopalmitate percentage	COI/T.20/Doc. No 23	Gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Fatty acid ethyl ester content	COI/T.20/Doc. No 28	Gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Halogenated solvents, traces	ISO 16035	Gas chromatography (FID)	II	No comments
Olive oils and olive pomace oils	Insoluble impurities in light petroleum	ISO 663	Gravimetry	I	No comments

[1] This method is retained pending review in CCFO29 and CCFO30. For background, refer to REP24/FO paras 83 and 84.

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
Olive oils and olive pomace oils	Iodine value	ISO 3961 / AOAC 9930.20 / AOCS Cd 1d-92 / NMKL 39	Wijs-Titrimetry	I	according to method and classification
Olive oils and olive pomace oils	Iron and copper	ISO 8294/AOAC 990.05	GFAAS	II	according to method and classification. Principle is Graphite Furnace Atomic Absorption
Olive oils and olive pomace oils	Lead	Use performance criteria*			No comments
Olive oils and olive pomace oils	Moisture and volatile matter	ISO 662	Gravimetry	I	No comments
Olive oils and olive pomace oils	Organoleptic characteristics	COI/T.20/Doc. no. 15	Panel test	I	according to method and classification
Olive oils and olive pomace oils	Peroxide value	ISO 3960 / AOCS Cd 8b-90	Titrimetry	I	according to method and classification
Olive oils and olive pomace oils	Peroxide value	COI/T.20/Doc. No 35	Titrimetry	~~IV~~ III	Considered Type III -The intercoparation of validation of method COI/T.20 Doc. No 35 results is accordance with purpose: RSDR(%) is 12% and RSDr(%) 1,4% and considered olive oil, extra virgin olive oil and mix olive oil and others vegetaals oils.
Olive oils and olive pomace oils	Pyropheophytin “a”	ISO 29841[2]	HPLC with UV/VIS or fluorescence detection	II	No comments

* ISO 12193; AOAC 994.02; and AOCS Ca 18c-91 are currently listed in CXS 234.

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
Olive oils and olive pomace oils	Relative density	ISO 6883 / AOCS Cc 10c-95	Pycnometry	I	validated for coconut, palm and rapedeed oil
Olive oils and olive pomace oils	Refractive index	ISO 6320 / AOCS Cc 7-25	Refractometry	II	Approved
Olive oils and olive pomace oils	Saponification value	ISO 3657 / AOCS Cd 3-25	Titrimetry	I	validated for coconut, palm, MCT and rapedeed oil
Olive oils and olive pomace oils	4□-desmethylsterol and total sterol content	COI/T.20/Doc. No 26	Gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Stigmastadienes	COI/T.20/Doc. no. 11	Gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Stigmastadienes	ISO 15788-1	Gas chromatography (FID)	III	No comments
Olive oils and olive pomace oils	Stigmastadienes	AOCS Cd 26-96	Gas chromatography (FID)	III	according to method and classification
Olive oils and olive pomace oils	Stigmastadienes	ISO 15788-2	HPLC –UV detector	III	according to method and classification
Olive oils and olive pomace oils	*trans* Fatty acids content	COI/T.20/Doc no. 33	Gas chromatography (FID) of methyl esters	II	according to method and classification
Olive oils and olive pomace oils	*trans* Fatty acids content	ISO 12966-2 and ISO 12966-4	Gas chromatography (FID) of methyl esters	III	according to method and classification
Olive oils and olive pomace oils	*trans* Fatty acids content	AOCS Ce 2-66 and AOCS Ce 1h-05	Gas chromatography (FID) of methyl esters	III	according to method and classification
Olive oils and olive pomace oils	Unsaponifiable matter	ISO 3596 / AOCS Ca 6b-53	Gravimetry	I	validated for soja, fish, tallow and rapedeed crude oil

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
Olive oils and olive pomace oils	Wax content	COI/T.20/Doc. no. 28 / AOCS Ch 8-02	Gas chromatography (FID)	II ~~III~~	The methods are equivalent, it is suggested to place both in equal and type II conditions. AOCS Ch 8-02/ COI/T.20/Doc.mo.28, type II
Olive oils and olive pomace oils	Sampling and preparation of test sample	ISO 5555 and ISO 661	---	---	According with sampling method for olive oils ans olive pomace oils. ISO 5555 is for sampling and ISO 661 for preparation of test sample.

OTHER QUALITY AND COMPOSITION FACTORS

3. METHODS OF ANALYSIS AND SAMPLING

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
Olive oils and olive pomace oils	Absorbency in ultra-violet	COI/T.20/Doc. No. 19 / ISO 3656 / AOCS Ch 5-91	Absorption in ultra-violet	I	according to method and classification
Olive oils and olive pomace oils	Acidity, free (acid value)	ISO 660 / AOCS Cd 3d-63 / COI/T.20/Doc. No 34	Titrimetry	I	according to method and classification
Olive oils and olive pomace oils	Alpha-tocopherol	ISO 9936	HPLC (UV or ~~fluorescence~~ FLD)	II	No comments
Olive oils and olive pomace oils	Alpha-tocopherol	AOCS Ce 8-89	HPLC (UV or ~~fluorescence~~ FLD)	III	according to method and classification
Olive oils and olive pomace oils	Difference between the actual and theoretical ECN 42 triglyceride content	COI/T.20/Doc. no. 20 and COI/T.20/Doc. No 33	HPLC Differential refractometer detector by Analysis of triglycerides) and GC	I	according to method and classification. the principle of the method is clarified

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
			(FID) by fatty acids by followed by calculation		regarding the detectors used
Olive oils and olive pomace oils	1,2 Diglycerides	COI /T.20/Doc.No 323	Gas chromatography (FID)	II	No comments
Olive oils and olive pomace oils	1,2 Diglycerides	ISO 29822[1]	Gas chromatography (FID)	III	No comments
Olive oils and olive pomace oils	Erythrodiol + uvaol	COI/T.20/Doc. No 26	~~Separation and~~ gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Fatty acid composition	COI/T.20/Doc. No 33	Gas chromatography (FID) of methyl esters	II	according to method and classification
Olive oils and olive pomace oils	Fatty acid composition	AOCS Ce 2-66 and AOCS Ch 2-91 / Ce 1h-05	Gas chromatography (FID) of methyl esters	III	according to method and classification
Olive oils and olive pomace oils	Fatty acid composition	ISO 12966-2 and ISO 12966-4	Gas chromatography (FID) of methyl esters	III	No comments
Olive oils and olive pomace oils	2-glyceryl monopalmitate percentage	COI/T.20/Doc. No 23	Gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Fatty acid ethyl ester content	COI/T.20/Doc. No 28	Gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Halogenated solvents, traces	ISO 16035	Gas chromatography (FID)	II	No comments
Olive oils and olive pomace oils	Insoluble impurities in light petroleum	ISO 663	Gravimetry	I	No comments
Olive oils and olive pomace oils	Iodine value	ISO 3961 / AOAC 9930.20 / AOCS Cd 1d-92 / NMKL 39	Wijs-Titrimetry	I	according to method and classification

[3] This method is retained pending review in CCFO29 and CCFO30. For background, refer to **REP24/FO** paras 83 and 84.

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
Olive oils and olive pomace oils	Iron and copper	ISO 8294 / AOAC 990.05	GFAAS	II	according to method and classification. Principle is Graphite Furnace Atomic Absorption
Olive oils and olive pomace oils	Lead	Use performance criteria*			No comments
Olive oils and olive pomace oils	Moisture and volatile matter	ISO 662	Gravimetry	I	No comments
Olive oils and olive pomace oils	Organoleptic characteristics	COI/T.20/Doc. No~~.~~ 15	Panel test	I	according to method and classification
Olive oils and olive pomace oils	Peroxide value	ISO 3960 / AOCS Cd 8b-90	Titrimetry	I	according to method and classification
Olive oils and olive pomace oils	Peroxide value	COI/T.20/Doc. No 35	Titrimetry	IV	according to method and classification
Olive oils and olive pomace oils	Pyropheophytin “a”	ISO 29841[3]	HPLC ~~with~~ UV/VIS or FLD ~~fluorescence detection~~	II	No comments
Olive oils and olive pomace oils	Relative density	ISO 6883 / AOCS Cc 10c-95	Pycnometry	I	Method validated for coconut, palm and rapedeed oil, not in olive oils
Olive oils and olive pomace oils	Refractive index	ISO 6320 / AOCS Cc 7-25	Refractometry	II	according to method and classification
Olive oils and olive pomace oils	Saponification value	ISO 3657 / AOCS Cd 3-25	Titrimetry	I	Method validated for coconut, palm, MCT and rapedeed oil, not in olive oils

* ISO 12193; AOAC 994.02; and AOCS Ca 18c-91 are currently listed in CXS 234.

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
Olive oils and olive pomace oils	4□-desmethylsterol and total sterol content	COI/T.20/Doc. No 26	Gas chromatography (FID)	II	according to method and classification
Olive oils and olive pomace oils	Stigmastadienes	COI/T.20/Doc. no. 11	Gas chromatography (FID)	II	according to method and classification. Methods for containing low concentrations of these hydrocarbons, particularly in virgin olive oils and crude olive pomace oil.
Olive oils and olive pomace oils	Stigmastadienes	ISO 15788-1	Gas chromatography (FID)	III	No comments
Olive oils and olive pomace oils	Stigmastadienes	AOCS Cd 26-96	Gas chromatography (FID)	III	according to method and classification
Olive oils and olive pomace oils	Stigmastadienes	ISO 15788-2	HPLC –UV detector	III	according to method and classification
Olive oils and olive pomace oils	*trans* Fatty acids content	COI/T.20/Doc no. 33	Gas chromatography (FID) of methyl esters	II	according to method and classification
Olive oils and olive pomace oils	*trans* Fatty acids content	ISO 12966-2 and ISO 12966-4	Gas chromatography (FID) of methyl esters	III	No comments
Olive oils and olive pomace oils	*trans* Fatty acids content	AOCS Ce 2-66 and AOCS Ce 1h-05	Gas chromatography (FID) of methyl esters	III	according to method and classification
Olive oils and olive pomace oils	Unsaponifiable matter	ISO 3596 / AOCS Ca 6b-53	Gravimetry	I	validated for soja, fish, tallow and rapedeed crude oil
Olive oils and olive pomace oils	Wax content	COI/T.20/Doc. No. 28 / AOCS Ch 8-02	Gas chromatography (FID)	II	The methods are equivalent, it is suggested to place both in equal and type II conditions. AOCS Ch 8-02/ COI/T.20/Doc.mo.28, type II
~~Olive oils and olive pomace oils~~	~~Wax content~~	~~AOCS Ch 8-02~~	~~Gas chromatography (FID)~~	~~III~~	

~~Fats and oils and related products~~ Commodity	Provision	Method(s)	Principle	Type	Comments to Chile
Olive oils and olive pomace oils	Sampling and preparation of test sample	ISO 5555 and ISO 661	---	---	According with sampling method for olive oils ans olive pomace oils. ISO 5555 is for sampling and ISO 661 for preparation of test sample.

Methods of analysis and sampling for provisions in Proposed draft amendment/revision of the Standard for fish oils (CXS 329-2017) : inclusion of calanus oil

8. METHODS OF ANALYSIS AND SAMPLING

Commodity	Provision	Method	Principle	Type	Comments to Chile
Fish oil	Wax content	AOCS Ch 8-02	Gas Chromatography	¿IV?	validated for extra virgin olive oil and mixture with other vegetable oils, does not present validation for fish oil. Its classification as type IV must be evaluated or one more suitable for the intended purpose must be sought because the characteristics of vegetable and animal oil differ significantly in their composition.

Tema de la agenda 3.1.1: RATIFICACIÓN DE PLANES DE MUESTREO: CCCF - ENDORSEMENT OF THE SAMPLING PLAN FOR METHYLMERCURY IN FISH

Chile has no comments regarding the methylmerurium sampling plan, although it should be taken into consideration that many terms may already be contained in CXG 50-2004 and it would not be advisable to repeat them.

Tema de la agenda 3.2: CRITERIOS DE RENDIMIENTO DE LOS MÉTODOS PARA FRUTAS Y HORTALIZAS SELECCIONADAS

In relation to the proposed criteria, these meet the performance criteria defined by the codex.

In relation to the ML of 1000 mg/kg, the minimum range indicated is 830 – 1169, however, it is recommended to round off 1169.6 to a value of 1170, leaving the range between 830 and 1170 mg/kg.

Performance criteria cannot be established for the determination of calcium in cases where there is no defined ML, as is the case with the determination of calcium for Certain canned vegetables, Citrus Marmalade, Canned citrus fruits and Preserved tomatoes. The product committee must define the ML of calcium and other requirements (provisions) for these foods.

Performance criteria for selected processed fruits and vegetables

Chile is it according to proposed of method performance criteria. In the minimum range, rounding of decimals is recommended in order to deliver whole numbers.

Commodity	**Provision**	**Codex Std.[4] CXS-**	**ML (mg/kg)**	**Method performance criteria**					
				Minimum applicable range (mg/kg)	**Limit of Detection (LOD) (mg/kg)**	**Limit of Quantification (LOQ) (mg/kg)**	**Precision (RSD_R) (%) No more than**	**Recovery (%)**	**Examples proposed by Chile of applicable methods that meet the criteria**
Jams, jellies, and marmalades	Benzoic Acid	192	1000	830 – ~~1169~~ 1170	100	200	11.3 %	95 – 105	ISO 5518, NMKL 124
Pickled cucumbers	Benzoic Acid	115	1000	830 – ~~1169~~ 1170	100	200	11.3 %	95 – 105	NMKL 124
Mango chutney	Benzoic Acid	160	250	197 – 302	25	50	13.9 %	90 – 107	ISO 5518, NMKL 124
Coconut milk and coconut cream	Benzoic Acid	240	1000	830 – ~~1169~~ 1170	100	200	11.3 %	95 – 105	ISO 5518, NMKL 124
Canned strawberries	Calcium	062	350	280 – 420	35	70	13.2 %	90 – 107	AOAC 968.31, NMKL 153
Pickled cucumbers	Calcium	115	250	197 – 302	25	50	13.9 %	90 – 107	AOAC 968.31, NMKL 153
Preserved tomatoes	Calcium	013	A requirement ML must be indicated in order to establish a performance criterion for the method.	¿?	¿?	¿?	¿?	¿?	The previous regulations indicated the methods: AOAC 968.31, NMKL 153

[4] Codex Standard listed to facilitate review and should be removed from the final numeric performance criteria table.

Commodity	Provision	Codex Std.[4] CXS-	ML (mg/kg)	Method performance criteria					
				Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSD_R) (%) No more than	Recovery (%)	Examples proposed by Chile of applicable methods that meet the criteria
Canned citrus fruits	Calcium	254	A requirement ML must be indicated in order to establish a performance criterion for the method.	¿?	¿?	¿?	¿?	¿?	The previous regulations indicated the methods: AOAC 968.31, NMKL 153
Certain canned vegetables	Calcium	297	A requirement ML must be indicated in order to establish a performance criterion for the method.	¿?	¿?	¿?	¿?	¿?	The previous regulations indicated the methods:AOAC 968.31, NMKL 153
Citrus Marmalade	Calcium	296	A requirement ML must be indicated in order to establish a performance criterion for the method.	¿?	¿?	¿?	¿?	¿?	The previous regulations indicated the methods:AOAC 968.31, NMKL 153
Jams, Jellies, and Marmalades	Sorbates	296	1000	830 – ~~1169~~ 1170	100	200	11.3 %	95 – 105	no method example suggestion made
Pickled Cucumbers	Sorbates	115	1000	830 – ~~1169~~ 1170	100	200	11.3 %	95 – 105	no method example suggestion made
Processed Fruits and Vegetables	Tin	193	250	197 – 302	25	50	13.9 %	90 – 107	AOAC 980.19
Table Olives	Tin	066	250	197 – 302	25	50	13.9 %	90 – 107	AOAC 980.19

Tema de la agenda 3.3: Asuntos pendientes desde la 42.ª reunión del CCMAS

- OBSERVACIONES EN RESPUESTA A LA CARTA CIRCULAR CL 2024/08-MAS

COMMENTS OF CHILE IN REPLY TO CL 2024/08-MAS

Request for information relating to methods of analysis / examples of methods of analysis
In relation to the examples of analysis methods in Appendix I, Chile makes the following suggestions and methods as examples, which satisfy the required performance criteria:

The NMKL 161 method allows the determination of lead and cadmium in the mentioned criteria and is suitable for foods with exception of oils, fats and extremely fatty foods.

The NMKL method 139, 1991. 2nd Ed. 2016. Metals. Determination by atomic absorption spectrophotometry in food products. It is a general method, which according to its general description could satisfy the requirements for table olives and other foods.

As for mineral waters, the *Standard Methods for the Examination of Water and Wastewater* is an international reference for the analysis of water of various types, which is why methods have been included as examples that satisfy these validation criteria for the provision and product.

Appendix I: Performance Criteria for Lead and Cadmium in Foods

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
								Example of applicable methods that meet the criteria[5]	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Methods	Principle
Natural mineral waters	lead	0.01	0.006 - 0.014	0.002	0.004	44	60-115%	Standard Methods 3125 B	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								EPA 200.5	Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP-AES)

[5] Example methods will be reviewed by CCMAS43

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
Infant formula, formula for special medical purposes intended for infants and follow-up formula	lead	0.01	0.006 - 0.014	0.002	0.004	44	60-115%	AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Milk	lead	0.02	0.011 - 0.029	0.004	0.008	44	60-115%	AOAC 973.25	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 999.11	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)
Secondary milk products	lead	0.02	0.011 - 0.029	0.004	0.008	44	60-115%	AOAC 973.25	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Fruit juices, except juices exclusively from berries and other small fruits	lead	0.03	0.017 - 0.043	0.006	0.012	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
Fat spreads and blended spreads	lead	0.04	0.022 - 0.058	0.008	0.016	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Grape juice	lead	0.04	0.022 - 0.058	0.008	0.016	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Canned chestnuts and canned chestnuts puree	lead	0.05	0.028 - 0.072	0.010	0.020	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
								Example of applicable methods that meet the criteria[5]	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Methods	Principle
Fruit juices obtained exclusively from berries and other small fruits, except grape juice	lead	0.05	0.028 - 0.072	0.010	0.020	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Fruiting vegetables, except fungi and mushrooms	lead	0.05	0.028 - 0.072	0.010	0.020	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Preserved tomatoes	lead	0.05	0.028 - 0.072	0.010	0.020	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Edible fats and oils	lead	0.08	0.045 - 0.115	0.016	0.032	44	60-115%	No comments	No comments

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
Berries and other small fruits, except cranberry, currant, and elderberry	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Brassica vegetables, except kale and leafy Brassica vegetables	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Bulb vegetables	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Canned fruits	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
								Example of applicable methods that meet the criteria[5]	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Methods	Principle
Canned vegetables	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Fruits, except cranberry, currants, and elderberry	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Legume vegetables	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Meat and fat of poultry	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	UNE-EN 14083	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)
								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
Meat of cattle, pigs and sheep	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	UNE-EN 14083	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)
								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Pickled cucumbers (cucumber pickles)	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Poultry, edible offal of	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Pulses	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
Root and tuber vegetables	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								UNE-EN 14083	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)
								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Wine from grapes harvested after July 2019	lead	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	OIV-MA-AS323-07	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Fortified / Liqueur wine from grapes harvested after 2019	lead	0.15	0.05 - 0.25	0.015	0.03	43	80-110%	OIV-MA-AS323-07	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Pig, edible offal of	lead	0.15	0.05 - 0.25	0.015	0.03	43	80-110%	UNE-EN 14083	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)

Commodity	Provision	ML (mg/kg)	Method performance criteria: Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Comment Chile: Example of applicable methods that meet the criteria[5]: Methods	Principle
								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Cattle, edible offal of	lead	0.2	0.08 - 0.32	0.02	0.04	41	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Cereal grains, except buckwheat, cañihua and quinoa	lead	0.2	0.08 - 0.32	0.02	0.04	41	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 999.11	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)
Cranberry	lead	0.2	0.08 - 0.32	0.02	0.04	41	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								UNE-EN 14083	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Currants	lead	0.2	0.08 - 0.32	0.02	0.04	41	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								UNE-EN 14083	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)
								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Elderberry	lead	0.2	0.08 - 0.32	0.02	0.04	41	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								UNE-EN 14083	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Wine (wine and fortified / liqueur wine) made from grapes harvested before July 2019	lead	0.2	0.08 - 0.32	0.02	0.04	41	80-110%	OIV-MA-AS323-07	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								OIV-MA-AS323-07	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)
Fish	lead	0.3	0.13 - 0.47	0.03	0.06	38	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 999.10	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Fresh farmed mushrooms (common mushrooms (*Agaricus bisporous*), shiitake mushrooms (*Lentinula edodes*), and oyster mushrooms	lead	0.3	0.13 - 0.47	0.03	0.06	38	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Commodity	Provision	ML (mg/kg)	Method performance criteria: Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Comment Chile: Example of applicable methods that meet the criteria[5]: Methods	Principle
(*Pleurotus ostreatus*))									
Leafy vegetables, except spinach	lead	0.3	0.13 - 0.47	0.03	0.06	38	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Jams, jellies, and marmalades	lead	0.4	0.18 - 0.62	0.04	0.08	37	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Mango chutney	lead	0.4	0.18 - 0.62	0.04	0.08	37	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
								AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Table olives	lead	0.4	0.18 - 0.62	0.04	0.08	37	80-110%	NMKL 139	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)

Commodity	Provision	ML (mg/ kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
Salt, food grade	lead	1	0.5 - 1.5	0.1	0.2	32	80-110%	EUSalt/AS 013	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Natural mineral waters	cadmium	0.00 3	0.0017 - 0.0043	0.0006	0.0012	44	40-120%	Standard Methods 3125 B	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								EPA 200.5	Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP-AES)
Brassica vegetables, except Brassica leafy vegetables	cadmium	0.05	0.03 - 0.07	0.01	0.02	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Bulb vegetables	cadmium	0.05	0.03 - 0.07	0.01	0.02	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Fruiting vegetables, except tomatoes and edible fungi	cadmium	0.05	0.03 - 0.07	0.01	0.02	44	60-115%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Cereal grains, except buckwheat, cañihua,	cadmium	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
quinoa, wheat and rice								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Legume vegetables	cadmium	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Pulses, except soya bean (dry)	cadmium	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Root and tuber vegetables, except celeriac	cadmium	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Stalk and stem vegetables	cadmium	0.1	0.03 - 0.17	0.01	0.02	44	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Leafy vegetables	cadmium	0.2	0.08 - 0.32	0.02	0.04	41	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
Wheat (common wheat, durum wheat, spelt and emmer)	cadmium	0.2	0.08 - 0.32	0.02	0.04	41	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Chocolate containing or declaring < 30% total cocoa solids on a dry matter basis	cadmium	0.3	0.13 - 0.47	0.03	0.06	38	80-110%	AOAC 2015.01	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Rice, polished	cadmium	0.4	0.18 - 0.62	0.04	0.08	37	80-110%	NMKL 161	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Salt, food grade	cadmium	0.5	0.23 - 0.77	0.05	0.10	36	80-110%	EuSalt/AS 002	Atomic Absorption Spectrophotometry-Flame Atomic Absorption (FAAS)
Chocolate containing or declaring ≥30% to <50% total cocoa solids on a dry matter basis	cadmium	0.7	0.35 - 1.05	0.07	0.14	34	80-110%	AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								AOAC 999.11	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
Chocolate containing or declaring ≥50% to <70% total cocoa solids on a dry matter basis, including sweet chocolate, Gianduja chocolate, semi – bitter table chocolate, Vermicelli chocolate / chocolate flakes, and bitter table chocolate	cadmium	0.8	0.40 - 1.20	0.08	0.16	33	80-110%	AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								AOAC 999.11	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)
Chocolate containing or declaring ≥70% total cocoa solids	cadmium	0.9	0.46 - 1.34	0.09	0.18	33	80-110%	AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
								Example of applicable methods that meet the criteria[5]	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Methods	Principle
on a dry matter basis, including sweet chocolate, Gianduja chocolate, semi – bitter table chocolate, Vermicelli chocolate / chocolate flakes, and bitter table								AOAC 999.11	Atomic Absorption Spectrophotometry- Graphite Furnace (GFAAS)
Cephalopods	cadmium	2	1.1 - 2.9	0.2	0.4	29	80-110%	NMKL 161	Atomic Absorption Spectrophotometry- Flame Atomic Absorption (FAAS)
								FDA EAM 4.7.	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Marine bivalve molluscs (clams, cockles and mussels), except	cadmium	2	1.1 - 2.9	0.2	0.4	29	80-110%	NMKL 161	Atomic Absorption Spectrophotometry- Flame Atomic Absorption (FAAS)
								FDA EAM 4.7.	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Commodity	Provision	ML (mg/kg)	Method performance criteria					Comment Chile	
			Minimum applicable range (mg/kg)	Limit of Detection (LOD) (mg/kg)	Limit of Quantification (LOQ) (mg/kg)	Precision (RSDR) (%) No more than	Recovery (%)	Example of applicable methods that meet the criteria[5]	
								Methods	Principle
oysters and scallops								AOAC 2013.06	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
								AOAC 999.11	Atomic Absorption Spectrophotometry-Graphite Furnace (GFAAS)

Performance criteria for lead in butter, edible casein and whey powders (developed by CCMAS41, adopted by CAC44 and included in CXS234)

Commodity	Provision	ML (mg/kg)	LOD (mg/kg)	LOQ (mg/kg)	RSDR (%)	Recovery	Minimum applicable range Minimum	Maximum	Examples of applicable methods that meet the criteria	Principle
Butter, edible casein products and whey powders, (secondary milk products)	Lead	0.02	0.004	0.008	≤ 44	60-115%	0.011	0.029	No comments	No comments

Appendix II

Comments of Chile: In relation to Appendix II, it is agreed to transfer to the criteria column for metals such as lead, because this makes it possible for countries to apply and use more methods that demonstrate through validation the Codex performance criteria.

Analytical methods for lead for review
(These methods will be removed from CXS 234 and transferred to the column of "example of applicable methods that meet the criteria", if they meet the performance criteria as presented in Appendix I)

<table>
<tr><th>Commodity</th><th>Provision</th><th>Method</th><th>Principle</th><th>Type</th><th>Comments</th></tr>
<tr><td colspan="5">Fats and Oils and Related Products</td><td>Chile</td></tr>
<tr><td>Fats and Oils (all)</td><td>Lead</td><td>AOAC 994.02 / ISO 12193 / AOCS Ca 18c-91</td><td>Atomic absorption spectrophotometry (direct graphite furnace)</td><td>II</td><td rowspan="5">It is suggested that these methods be included as examples of applicable methods if they comply with the Codex criteria for lead in these products in their validation. AOCS, NMKL and AOAC can provide background information on this matter.</td></tr>
<tr><td>Named Vegetable Oils</td><td>Lead</td><td>AOAC 994.02 / ISO 12193 / AOCS Ca 18c-91</td><td>Atomic absorption spectrophotometry (direct graphite furnace)</td><td>II</td></tr>
<tr><td>Olive Oils and Olive Pomace Oils</td><td>Lead</td><td>AOAC 994.02 or ISO 12193 or AOCS Ca 18c-91</td><td>AAS</td><td>II</td></tr>
<tr><td>Butter</td><td>Lead</td><td>AOAC 972.25 (Codex general method)</td><td>Atomic absorption spectrophotometry</td><td>IV</td></tr>
<tr><td>Edible casein products</td><td>Lead</td><td>NMKL 139 (Codex general method)
AOAC 999.11</td><td>Atomic absorption spectrophotometry</td><td>IV</td></tr>
<tr><td>Edible casein products</td><td>Lead</td><td>NMKL 161 /
AOAC 999.10</td><td>Atomic absorption spectrophotometry</td><td>IV</td><td>It is agreed to include NMKL 161 as an example. harmonizing the principle of method description</td></tr>
<tr><td>Edible casein products</td><td>Lead</td><td>ISO/TS 6733 | IDF/RM 133</td><td>Spectrophotometry (1,5-diphenylthiocarbazone)</td><td>IV</td><td>No comments</td></tr>
<tr><td colspan="6">Processed Fruits and Vegetables</td></tr>
</table>

Commodity	*Provision*	*Method*	*Principle*	*Type*	*Comments*
Fats and Oils and Related Products					**Chile**
Table olives	Lead	AOAC 999.11 | NMKL 139 (Codex general method)	AAS (Flame absorption)	II	It is suggested that these methods be included as examples of applicable methods if they comply with the Codex criteria for lead in these products in their validation. AOAC can provide background information on this matter. NMKL 139 is OK.
Miscellaneous Products					
Food grade salt	Lead	EuSalt/AS 015	ICP-OES	III	It is agreed to include EUSAL/AS 015 as an example. harmonizing the principle of method description
Food grade salt	Lead	EuSalt/AS 013	Atomic absorption spectrophotometry	IV	It is agreed to include EUSAL/AS 013 as an example. harmonizing the principle of method description

Appendix III

General Methods for the Detection of Irradiated Foods
(for review and possible inclusion in CXS 234)
(New texts added are shown in **bold/underlined** font. Texts proposed for deletion are shown in ~~strikethrough~~
(as proposed by CCFH53)

Commodity	**Provision**	**Method**	**Principle**	**Type**	**Comments Chile**
Food containing fat **(e.g. raw meat and chicken, cheese, fruits)**	Detection of irradiated food **- Detection of radiation-induced hydrocarbons**	EN 1784 ~~: 1996~~	Gas chromatographic (FID or MS) ~~analysis of hydrocarbons~~	Type II	It is agreed to eliminate the year from the proposed EN standard, so that it is harmonized according to CXS 234. Unnecessary information must be eliminated from the analytical principle of the methods (are placed in red crossed out). In general, Screening methods should be classified as type IV.
Food containing fat **(e.g. raw meat and chicken, liquid whole egg)**	Detection of irradiated food **- Detection of radiation-induced 2-alkylcyclobutanones**	EN 1785[1]~~: 1996~~	Gas chromatographic~~/ mass spectrometric~~ (GC-MS) ~~analysis of 2-alkylcyclobutanones~~	Type III	
Food containing bone	Detection of irradiated food - **Radiation induced Electron Spin Resonance (ESR) signal attributed to hydroxyapatite (principal component of bones)**	EN 1786~~: 1996~~	ESR spectroscopy	Type II	
Food containing cellulose **(e.g. nuts and spices)**	Detection of irradiated food **- Radiation induced Electron Spin Resonance (ESR) signal attributed to crystalline cellulose**	EN 1787~~: 2000~~	ESR spectroscopy	Type II	
Food containing silicate minerals **(e.g. herbs, spices, their mixtures and shrimps)**	Detection of irradiated food - **Thermoluminescence glow ratio used to indicate the irradiation treatment of the food**	EN 1788~~: 2001~~	Thermoluminescence	Type II	
Food containing silicate minerals **(e.g. shellfish, herbs, spices, seasonings)**	Detection of irradiated food **- Measurement of photostimulated luminescence intensity**	EN 13751[2]~~: 2002~~	Photostimulated luminescence	Type ~~III~~ IV	
Food containing crystalline sugar **(e.g. dried fruits and raisins)**	Detection of irradiated food **- Radiation induced Electron Spin Resonance (ESR) signal attributed to crystalline sugar**	EN 13708~~: 2001~~	ESR spectroscopy	Type II	

Commodity	Provision	Method	Principle	Type	Comments Chile
Herb**s and** spices ~~and raw minced meat~~ [3]	Detection of irradiated food **- Difference between total microorganism count and viable microorganism count**	EN 13783~~: 2001~~ NMKL 231 ~~(2002)~~	Direct Epifluorescent Filter Technique &Aerobic Plate Count (DEFT/APC) ~~(screening method)~~	Type ~~III~~ IV	
Food containing DNA **(e.g. food products, both of animal and plant origin such as various meats, seeds, dried fruits and spices)**	Detection of irradiated food **- Detection of DNA fragmentation presumptive to irradiation treatment**.	EN 13784~~:2001~~	DNA comet assay ~~(screening method)~~	Type ~~III~~ IV	

Notes: [1] One Member noted that 2-alkylcyclobutanone was also present in some non-irradiated foods and hence EN1785 may need further consideration as a method for detection of irradiated foods.

[2] Consideration should be given to whether EN13751 should be specified as a screening method.

[3] No information was found on validation of the method for this commodity.

Appendix IV

Comments of Chile: Chile considers that the proposed limits (LOD, LOQ), precision and % Recovery are adequate. and example methods that meet the criteria are proposed.

Performance criteria for methods for determination of MLs for aflatoxins in certain cereals and cereal-based products including foods for infants and young children

(Method criteria for total aflatoxins in cereals, considering AFB1: AFB2: AFG1: AFG2 of 1:1:1:1.)

Commodity	~~Analyte~~ Provision	ML (µg/kg)	LOD (µg/kg)	LOQ (µg/kg)	Precision (%)	Minimal applicable range (µg/kg)	Recovery (%)	Comments Chile	
								Example methods	Principle
Maize grain	AFB1+B2+G1+G2	15	≤ 3	≤ 6	<44	8.4 - 21.6 (8 - 22)	60-115	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
								AOAC 993.17	Thin layer chromatography (TLC)
	AFB1	-	≤0.75 [≤0.8]	≤ 1.5	<44	2.10– 5.40 [2.1-5.4]	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
								AOAC 990.34	Inmunoassay
	AFB2	-	≤0.75 [≤0.8]	≤1.50	<44	2.10 – 5.40 [2.1-5.4]	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
								AOAC 990.34	Inmunoassay
	AFG1	-	≤0.75 [≤0.8]	≤1.50	<44	2.10 – 5.40 [2.1-5.4]	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)

								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
								AOAC 990.34	Inmunoassay
	AFG2	-	≤0.75 [≤0.8]	≤1.50	<44	2.10 – 5.40 [2.1-5.4]	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
Maize flour, meal, semolina and flakes derived from maize; Sorghum grain; cereal-based foods for infants and young children for food aid programs	AFB1+B2+G1+G2	10	≤2	≤4	<44	5~~.6~~ - 14~~.4~~ [6-14]	60-115	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
	AFB1	-	≤0.5	≤1.0	<44	1.4 - 3.6	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
	AFB2	-	≤0.5	≤1.0	<44	1.4 - 3.6	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
	AFG1	-	≤0.5	≤1.0	<44	1.4 - 3.6	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
	AFG2	-	≤0.5	≤1.0	<44	1.4 - 3.6	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
Husked Rice	AFB1+B2+G1+G2	20	≤4	≤8	<44	11.2 - 28.8	60-115	ISO 16050	Liquid Chromatographic (HPLC-FLD)

								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
	AFB1	-	≤1.0	≤2.0	<44	2.8 – 7.2	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
	AFB2	-	≤1.0	≤2.0	<44	2.8 – 7.2	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
	AFG1	-	≤1.0	≤2.0	<44	2.8 – 7.2	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
	AFG2	-	≤1.0	≤2.0	<44	2.8 – 7.2	40-120	ISO 16050	Liquid Chromatographic (HPLC-FLD)
								AOAC 991.31	Liquid Chromatographic (HPLC-FLD)
Polished Rice; Cereal-based food for infants and young children	AFB1+B2+G1+G2	5	≤1	≤2	<44	2~~.8~~ - 7~~.2~~	40-120	No comments	No comments
								No comments	No comments
	AFB1	-	≤0.25 [or ≤0.3]	≤0.5	<44	0.70 – 1.80 [or 0.7-1.8]	40-120	No comments	No comments
								No comments	No comments
	AFB2	-	≤0.25 [or ≤0.3]	≤0.5	<44	0.70 – 1.80 [or 0.7-1.8]	40-120	No comments	No comments
								No comments	No comments

	AFG1	-	≤0.25 [or ≤0.3]	≤0.5	<44	0.70 – 1.80 [or 0.7-1.8]	40-120	No comments	No comments
								No comments	No comments
	AFG2	-	≤0.25 [or ≤0.3]	≤0.5	<44	0.70 – 1.80 [or 0.7-1.8]	40-120	No comments	No comments
								No comments	No comments

Appendix V

Determination of Moisture Content in Dried Milk

Comments of Chile: Chile considers that the validation of the method by intercomparison led by Uruguay and RILAA is yes; demonstrates the applicability of the method for a matrix similar to milk powder, such as milk permeate and whey powder, the scope of the method could be expanded.

Products	~~**Parameter**~~ **Provison**
Powdered milk, Powdered cream, and Blend of skimmed milk powder with vegetable fat.	Moisture **to 102°C**

DESCRIPTION OF THE METHOD: DETERMINATION OF MOISTURE

1.SCOPE

This Standard specifies a method for the determination of moisture content for all types of powdered milk, powdered cream, and mixtures of powdered skimmed milk with vegetable fat.

2.DEFINITION

The content is the mass loss determined by the procedure specified in this Standard. It is expressed in percentage by mass g/100 g.

3.PRINCIPLE

A portion of the sample is dried in an oven set at (102 ± 2) °C until constant weight and weighed to determine the loss of mass.

4.EQUIPMENT

Common laboratory equipment and, in particular, the following.

Analytical balance, capable of weighing with a precision of 1 mg, with a minimum resolution of 0.1 mg.

Drying oven, with good ventilation, as far as possible with forced ventilation, capable of being thermostatically maintained at (102 ± 2) °C throughout the workspace, with a temperature controller.

4.3 **Desiccator,** with freshly dried silica gel with hygrometric indicator or another effective desiccant.

Flat-bottomed dishes, approximately 25 mm deep, approximately 50 mm in diameter, and made of an appropriate material (for example, glass, stainless steel, nickel, or aluminium), fitted with tight-fitting, removable lids easily.

5.SAMPLING

It is important that the laboratory receive a truly representative sample and that it has not been damaged or changed during transport or storage.

Sampling is not part of the method specified in this Standard. A recommended sampling method is provided in ISO 707 | IDF 50.

6.TEST SAMPLE PREPARATION

Transfer the entire sample to a dry, tightly closed container with a capacity of approximately twice the volume of the sample. Mix thoroughly by turning and shaking the container.

7. PROCEDURE

7.1 Preparation of the dish

7.1.1 Heat the uncovered capsule and its lid (4.4) in the oven (4.2) controlled at (102 ± 2)°C, for 1 h.

7.1.2 Transfer the capped dish to the desiccator (4.3), allow it to cool to room temperature in the balance room, and weigh (4.1) to the nearest 0.1 mg.

7.2 Test sample

7.2.1 Place 1 - 1.5 g of the prepared test sample (6) in the dish, cover with the lid and weigh to the nearest 0.1 mg.

7.3 Determination

7.3.1 Uncover the capsule and place it together with the lid in the oven (4.2), controlled at (102 ± 2)°C for 2 hrs.

7.3.2 Replace the cap, transfer the capped dish to the desiccator, allow to cool to balance room temperature, and weigh to the nearest 0.1 mg.

7.3.3 Uncover the capsule and heat again, along with its lid, on the oven for 1 h. Then repeat operation 7.3.2.

7.3.4 Repeat this process until the difference in mass between two successive weighings does not exceed 0.5 mg. Record the lowest mass.

8.CALCULATION AND EXPRESSION OF RESULTS

8.1 Calculation

The moisture content in the sample, expressed in g/100 g, is equal to:

$$\text{moisture} = \frac{(m_1 - m_2) \times 100}{(m_1 - m_0)}$$

where,

m_0 is the mass, in grams, of the dish and lid (7.1.2)

m_1 is the mass, in grams, of the dish, lid and test sample before drying (7.2.1)

m_2 is the mass, in grams, of the dish, lid and test sample after drying (7.3.4)

8.2 Expression of test results

Express the sample results to two decimal places.

Tema de la agenda 4.1: Conjunto manejable para los cereales, legumbres y leguminosas

Comment to Chile in relation to Methods reviewed during EWG following CCMAS42 (Round 3 of the EWG-CPL) Cereals, Pulses and Legumes and Derived Products

Commodity	Provision	Codex Standard	Method	Principle	Type	Committee	Comments Of EWG	Comments Chile
Degermed maize (corn) meal and maize (corn) grits	Ash **Ash to 550 °C** **Ash- to 900 °C**	CXS 155-1985 (2019)	AOAC 923.03 / ISO 2171 ICC Method No 104/1 **and ICC 110/1** AOAC 923.03 / ISO 2171 / ICC Method No 104/1 **and ICC 110/1**	**Calculation from moisture and** Gravimetry (incineration at 550°C) **Calculation from moisture and Gravimetry** (incineration at 900°C)	I **I**	CCCPL	Only one Type I method is allowed for each provision, to allow for the two temperatures used in the ash determination globally, a change to the provision is suggested	in accordance with maintaining the AOAC 923.03 method as type I equivalent to ISO 2171 and ICC 110/1 for ash at 550°C. Correctly express the provision: "Ash to... °C".
Gari	Particle size	CXS 151-1989 (2019)	ISO 2591-1 **ICC Recommendation 207**	Sieving	I **I**	CCCPL	To align with CXS 151: 1250 µm aperture sieve is required	no comment
Edible Cassava flour	Particle size	CXS 176-1989 (2019)	ISO 2591-1 **ICC Recommendation 207**	Sieving	I **I**	CCCPL	To align with CXS 151: 600, 1200 µm aperture sieves are required	no comment

Pearl millet flour	Colour	CXS 170-1989 (2019)	~~*Modern Cereal Chemistry*, 6th Ed., D.W. Kent-Jones and A.J. Amos (Ed.), pp. 605-612, Food Trade Press Ltd, London, 1969.~~ **ISO 16624:2020**	Colorimetry ~~using (specific colour grader)~~	~~IV~~ **I**	CCCPL	no comment
Quinoa	Moisture **to 130° C**	CXS 333-2019 (2020)	ISO 712 ~~/ AACCI 44-15.02~~	Gravimetry ~~(oven drying)~~	I	CCCPL	It is agreed as Type I. The validation history by the inter-American interlaboratory metrology system (SIM) demonstrates that it is adequate. AOAC Method 925.10 is equivalent (130 +/- 3°C x 1 h)
Quinoa	Protein ~~(N x 6.25 in dry weight basis)~~[1]	CXS 333-2019 (2020)	ISO 1871	Titrimetry (Kjeldahl digestion)	~~IV~~ I	CCCPL	Type I because the method ISO 1871 Is adecuate for puporse. The validation history by the inter-American interlaboratory metrology system (SIM) demonstrates that it is adequate. It is possible to include the AOAC 2001.11 Titrimetry (Kjeldahl digestion) method for control as type III.

Sorghum flour	~~Ash~~ **Ash to 550 °C** **Ash- to 900 °C**	CXS 173-1989 (2019)	AOAC 923.03 **/** ISO 2171 ~~ICC 104/1~~ **and ISO 712 / ICC 110/1** ~~AOAC 923.03~~ ~~/~~ ISO 2171 **/** ICC 104/1 – ~~900°C~~ **and ISO 712 / ICC 110/1**	**Calculation from moisture and** Gravimetry ~~(incineration at 550°C)~~ **Calculation from moisture and** Gravimetry ~~(incineration at 900°C)~~	I **I**	CCCPL	Only one Type I method is allowed for each provision, to allow for the two temperatures used in the ash determination globally, a change to the provision is suggested	in accordance with maintaining the AOAC 923.03 method as type I equivalent to ISO 2171 and ICC 110/1 for ash at 550°C. Correctly express the provision: "Ash to... °C"
Sorghum flour	Colour	CXS 173-1989 (2019)	~~*Modern Cereal Chemistry*, 6th Ed., D.W. Kent-Jones and A.J. Amos (Ed.), pp. 605-612, Food Trade Press Ltd, London, 1969.~~ **ISO 16624:2020**	Colorimetry ~~using~~ (specific colour grader)	~~IV~~ **I**	CCCPL		No comments

Sorghum grains	Ash Ash to 550 °C	CXS 172-1989 (2019)	AOAC 923.03 / ISO 2171 ICC 104/1 **and ISO 6540**	**Calculation from moisture and** Gravimetry (incineration at 550°C)	I I	CCCPL	Only one Type I method is allowed for each provision, to allow for the two temperatures used in the ash determination globally, a change to the provision is suggested	in accordance with maintaining the AOAC 923.03 method as type I equivalent to ISO 2171 and ICC 110/1 for ash at 550°C. Correctly express the provision: "Ash to... °C"
	Ash- to 900 °C		AOAC 923.03 / ISO 2171 / ICC 104/1 1 – 900°C **and ISO 6540**	**Calculation from moisture and** Gravimetry (incineration at 900°C)				
Soy protein products	Fat	CXS 175-1989 (2019)	CAC/RM 55 - Method 1 **ISO 734: 2023**	Gravimetry (extraction)	I I	CCVP	ISO 11085 has been proposed by EWG member	It is possible to include the AOAC 2003.05 Crude fat in feeds, cereal grains, and forages. Randall/soxtec/Diethyleter Extraction-sumersion method) as type II or III.
Soy protein products	Crude Protein; excluding added vitamins, minerals, amino acids and food additives	CXS 175-1989 (2019)	AOAC 955.04D (using factor 6.25) **AOCS Ba 4f-00** **AACCI 46.30** **ISO 16634-1:2008**	Titrimetry (Kjeldahl digestion) **Gravimetry (Combustion)**	II I IV IV IV	CCVP		It is possible to include the AOAC 2001.11 Titrimetry (Kjeldahl digestion) method for control as type II or III.

Vegetable protein products	Fat	CXS 174-1989 (2019)	~~CAC/RM 55 - Method 1~~ **ISO 734: 2023**	Gravimetry ~~(extraction)~~	~~I~~ I	CCVP	ISO 11085 has been proposed by EWG member	It is possible to include the AOAC 2003.05 Crude fat in feeds, cereal grains, and forages. Randall/soxtec/Diethyleter Extraction-sumersion method) as type II or III.
Vegetable protein products	**Crude** Protein; excluding added vitamins, minerals, amino acids and food additives	CXS 174-1989 (2019)	~~AOAC 955.04D (using factor 6.25)~~ **AOCS Ba 4f-00** **AACCI 46.30** **ISO 16634-1:2008**	~~Titrimetry (Kjeldahl digestion)~~ **Gravimetry ~~(Combustion)~~**	~~II I~~ IV IV IV	CCVP		include the AOAC 2001.11 Titrimetry (Kjeldahl digestion) method for control as typeII or III.
Wheat flour	~~Ash~~ **Ash to 550 °C** **Ash- to 900 °C**	CXS 152-1985 (2019)	AOAC 923.03 / ISO 2171 ~~ICC 104/1~~ ~~AOAC 923.03~~ ISO 2171 / ICC 104/1	Gravimetry ~~(incineration at 550°C)~~ Gravimetry ~~(incineration at 900°C)~~	I I	CCCPL	Only one Type I method is allowed for each provision, to allow for the two temperatures used in the ash determination globally, a change to the provision is suggested	Correctly express the provision: "Ash to... °C"

Whole maize (corn) meal	~~Ash~~ **Ash to 550 °C** **Ash- to 900 °C**	CXS 154-1985 (2019)	AOAC 923.03 / ISO 2171 ~~ICC 104/1~~ **and ICC 110/1** ~~AOAC 923.03~~ **ISO 2171 / ICC 104/1 and ICC 110/1**	~~Calculation from moisture and~~ Gravimetry ~~(incineration at 550°C)~~ ~~Calculation from moisture and~~ Gravimetry ~~(incineration at 900°C)~~	I **I**	CCCPL	Only one Type I method is allowed for each provision, to allow for the two temperatures used in the ash determination globally, a change to the provision is suggested	Correctly express the provision: "Ash to... °C"

Tema de la agenda 4.2: Conjunto manejable para el pescado y productos pesqueros

Spanish

Para el CXS 292-2008, sobre el Método AOAC 959.08 de bioensayo en ratón para la determinación de veneno paralizante en mariscos (VPM) de, Chile está de acuerdo que se mantenga sin cambios el método aoac 959.08 mouse bioasday como tipo IV para fines del CCS 292-2008 en base a los acuerdos establecidos en el CCMAS36, ya que las razones justificables técnicas requerían contar con método alternativo al instrumental para dar una respuesta para fines de control y vigilancia, no se cuenta en todos los laboratorios con equipos instrumentales de alta tecnología , así como no estar disponibles de todos los estándares de referencia certificados de todas las toxinas del grupo de las saxitoxinas y su alto costo, es por ello, que el comité de pesca solicitó la ratificación de este método en su momento, presentándose los antecedentes de validación del método de bioensayo en ratón para el fin previsto por parte de Chile en su momento.

En respuesta a CL 2024/15-MAS

English

For CXS 292-2008, regarding the AOAC 959.08 mouse bioassay method for the determination of Paralytic Shellfish Poisoning (PSP) in shellfish, Chile agrees to maintain the AOAC 959.08 mouse bioassay method as Type IV for the purposes of CXS 292-2008, based on the agreements established in CCMAS36. This decision is due to technical justifications that required an alternative method to instrumental analysis for monitoring and surveillance purposes. Not all laboratories have access to high-tech instrumental equipment, and certified reference standards for all saxitoxin toxins are not universally available, leading to high costs. Therefore, the Fisheries Committee requested the ratification of this method, providing validation data for the mouse bioassay method for the intended purpose by Chile at that time.

In response to CL 2024/15-MAS

Tema de la agenda 8: Armonización de los nombres y el formato de los principios determinados en la norma CXS 234

COMMENTS OF CHILE TO HARMONIZATION OF NAMES AND FORMAT FOR PRINCIPLES IDENTIFIED IN CXS 234

Chile appreciates the work carried out by Brazil, and agrees to harmonize the terms of the methods, which would facilitate the digitization of CXS 234 through an online platform or Excel. We make the following observations and suggestions to the document.

In relation to Definitions

It is suggested to incorporate these definitions of analytical techniques:

- **Chromatography**: Is a physical separation method in which the components to be separated are distributed between two phases, one that is stationary (stationary phase) while the other (the mobile phase) moves in a certain direction.
- **Gravimetry:** Is a quantitative analytical method, that is, it determines the amount of a substance by measuring its weight (due to the action of gravity).
- **Titrimetry:** the determination of a given component from a solution by adding a liquid reagent of known concentration until a given result is achieved.
- **Biological assay:** It is an analytical method to determine the response, potency or effect of a substance by its effect in vivo or in vitro.
- **Visual examination:** Technique to detect the presence of defects, foreign or foreign matter in a food through sight, with or without the support of optical equipment (example: magnifying glass, microscope or others).
- **Sensorial assay:** Evaluation of the organoleptic attributes (appearance, taste and others) of a product through the senses.

In relation other Acronyms in CXS 234

It is suggested to include a list of acronyms of the method standard references. This would also help avoid confusion and allow correct reference to the members to which the international standard is referred to, for example ISO is International Organization for Standardization and IS is Indian Standard. (see list proposal: **LIST ACRONYMS REFERENCE STANDARDS METHODS)**

Criteria Used

Assays Whose Results Are Method Dependent (Type 1 methods)

In relation to the description of the provision, it is agreed that aspects such as the temperature of the humidity or ash are relevant, which is why it is agreed that in such cases these details, as well as the factor of proteins or whether you want to express the result on a dry basis or not. For example:

It is also important to consider that some methods could be confused with the definition of sensory and the principle of visual inspection, which is why there must be an agreement since sensory generally refers to organoleptic evaluation, and visual refers to review by observation of the product under magnifying glass or microscope.

Example: Strange Matters – Visual, según la definición del punto 4 sería sensorial

Assays Whose Results Are Independent of the Method (Type 2 Methods)

We agree that the analytical technique should be defined to establish the analytical principle of CXS 234 as the acronyms that will be accompanied so that everyone understands the same, which is why we suggest incorporating the following terms that are in red below, in the list prepared by Brazil.

In the same way, agree on the acronyms for everyone's understanding and avoid duplication.

The proposed version of the harmonized principles

1 Anodic Stripping Voltametry

2 Atomic Absorption Spectrophotometry (AAS)

– Hydride generation (HGAAS)

– ~~Direct graphite furnace~~ (duplicate term)

– Flame atomic absorption (FAAS)

– Graphite furnace (GFAAS)

– Cold Vapour (CVAAS)

– Flow injection Analysis (FIA- AAS)

3 Biological assay

– Bioassay **(in animals, tissue, plants)**

– Microbioassay

4 Inmunoassay

5 Brix

6 Carbon Isotope Ratio Mass Spectrometry

7 Centrifugation % Value

8 Colorimetry

9 Conductimetry/Resistivity

10 Confocal Laser Scanning Microscopy *(CLSM)*

11 Densitometry

12 Detect nuclear DNA Assay

- DNA Comet Assay

- Polymerase chain reaction (PCR)

13 Electrophotometry

14 Eletrometric

15 Enzimatic

16 Fluorimetry

17 Gas Chromatography (GC)

– ~~(~~Flame Ionization Detector~~)~~ FID

– (Mass Spectrometry) MS

– (Tandem Mass Spectrometry) (MS/MS)

– (Thermal Conductivity Detector) TCD

– (Flame Thermionic Detector) FTD

– (Flame Photometric Detector) FPD

– (Electron Capture Detector) ECD

– (Nitrogen Phosphorus Detector) NPD

17 Gravimetry

– Ashing at 550°C

– Ashing at 900°C

– Drying at 87°C

– Drying at 88°C

– Drying at 103°C

– Drying at 110°C

– Drying at 120°C

– Drying at 130°C

– Rose-Gottlieb

– Weibull-Berntrop

– Schmid-Bondzynski- Ratslaff

– Vacuum Drying at 70°C

18 Inductively Coupled Plasma (ICP)

– (Optical Emission Spectrometry) OES

– (Mass Spectrometry) (MS)

– (Isotope Dilution Mass Spectrometry) (ID MS)

~~19 Immunoaffinity Column~~ (Eliminate is an input not an analytical principle, it is a sample treatment process)

~~20 Immunoassay~~

20 Ion Exchange Chromatography (IC)

– Pulsed Amperometric Detector (PAD)

– Electrochemical (EC)

– Thermal Conductivity Detector (TCD)

– Diode Array Detector (DAD)

– UV/Vis

– Mass Spectrometry (MS)

– Refractive index (RI)

– Variable Wavelength Detector (VWD)

21. Liquid Chromatography (LC)

– (Mass Spectrometry) (MS)

– (Isotope Dilution Mass Spectrometry) (ID MS)

– (Tandem Mass Spectrometry) (MS/MS)

– (Refractive index) (RI)

– Pulsed amperometry detection (PAD)
– (Fluorescence Detector) (FLD)
– (Ultraviolet) (UV)
– (Diode Array Detector) DAD
– (Infrared) (IR)

22. Microbioassay
22. Microscopy
24. Microscopy (Howard Mould Count)
23. Nephelometry
24. Nuclear Magnetic Resonance Spectroscopy (NMR)
27. Photometry
28. Photostimulated Luminescence (PSL)
29. Polarimetry
30. Pycnometry
31. Refractometry
32. Spectrometry
   – Stable isotope mass (IMS)
   – Fluorescence (FLD)
   – ESR (Electron Spin Resonance) (ERS)
   – Ultraviolet (UV)
   – Ultraviolet-Visible (UV-Vis)
   – Near Infrared Reflectance Spectroscopy (NIRS)
33. Thermolluminescence
34. Thermometry
35. Thin Layer Chromatography (TLC)
   - Densitometry detector
   -UV/Vis
   -Fluorometric detector
36. Titrimetry
   – Karl Fischer
   – Kjeldahl Digestion
   – Lane & Enyon
   – Wijs
   – Iodimetry & Iodometry
   – Acidity
37. Turbidity
38. Visual examination
39. Volumetry

Abbreviations:

AAS Atomic Absorption Spectrophotometry

AES	Atomic Emission Spectrometry
CE	Capillary Electrophoresis
CLSM	Confocal Laser Scanning Microscopy
CVAAS	Cold Vapour Atomic Absorption Spectrophotometry
DAD	Diode Array Detector
EC	Electrochemical Detector
ECD	Electron Capture Detector
ERS	Electron Spin Resonance
ESR	Electron Spin Resonance
FAAS	Flame Atomic Absorption Spectrophotometry
FIA- AAS	Flow injection Analysis Atomic Absorption Spectrophotometry
FID	Flame Ionization Detector
FLD	Fluorescence Detector
FPD	Flame Photometric Detector
FTIR	Fourier transform infrared spectroscopy.
FTD	Flame Thermionic Detector
GC	Gas Chromatography
GFAAS	Graphite furnace Atomic Absorption Spectrophotometry
HGAAS	Hydride generation Atomic Absorption Spectrophotometry
HPLC	High Pressure Liquid Chromatography
IC	Ion Chromatography
ICP	Inductively Coupled Plasma
ID	Isotope Dilution
IMS	Stable isotope mass
IR	Infrared
LC	Liquid Chromatography
MS	Mass Spectrometry
MS/MS	Tandem Mass Spectrometry
NMR	Nuclear Magnetic Resonance Spectroscopy
NIRS	Near Infrared Reflectance Spectroscopy
NPD	Nitrogen Phosphorus Detector
OES	Optical Emission Spectrometry
PAD	Pulsed Amperometry Detection
PSL	Photostimulated Luminescence
RI	Refractive Index
TCD	Thermal Conductivity Detector
TLC	Thin-layer chromatography
HPLC	High Pressure Liquid Chromatograph
HPTLC	High Performance Thin Layer Chromatography
UHPLC	Ultra-High Pressure Liquid Chromatograph
UV	Ultraviolet

UV-Vis	Ultraviolet-Visible
VWD	Variable Wavelength Detector

LIST ACRONYMS REFERENCE STANDARDS METHODS

AACC	Cereals & Grains Association (www.cerealsgrains.org/)
AIIBP	International Association of the Bouillon and Soup Industry (www.culinaria-europe.eu/)
AOAC	AOAC International (www.aoac.org/)
AOCS	American Oil Chemists' Society (www.aocs.org/)
COI	Collection of methods by the International live (www.internationaloliveoil.org/)
EN	European Standards (www.en-standard.eu/)
EUsalt	European Salt Producers´Association (https://eusalt.com/)
ICC	International Association for Cereal Science and Technology (https://icc.or.at/)
ICUMSA	International Commission for Uniform Methods of Sugar Analysis (www.icumsa.org/)
IDF	International Dairy Federation (https://fil-idf.org/)
IFU	International Fruit and Vegetable Juice Association (https://ifu-fruitjuice.com/)
IHC	International Honey Commision (www.ihc-platform.net/)
IOCCC	International Office of Cocoa, Chocolate, and Sugar Confectionery (www.icco.org/)
IS	Indian Standard (www.bis.gov.in/)
ISI	International Starch Institute (www.starch.dk/)
ISO	International Organization for Standardization (www.iso.org/)
NMKL	Nordic-Baltic Committee on Food Analysis (www.nmkl.org/)
USP	US Pharmacopeia (www.usp.org/)

Tema de la agenda 9: Enfoque respecto de la ubicación de los factores de conversión del nitrógeno

Chile worked with Brazil to develop the proposal. Our country considers that it is more convenient to have in an appendix to CXS 234 a list by product (food matrix) of the conversion factors made official by the product committees. of the codex, for quick consultation by laboratories that use as reference the official codex methods to evaluate the protein content in food.

Tema de la agenda 10: Lista de métodos del Tipo IV en la norma CXS 234 cuando se menciona un método del Tipo I para el mismo producto y la misma disposición

Apoyamos la evaluación de coexistencia de un método con evaluación caso a caso, cuando se proporciona una razón justificada.

Estamos de acuerdo con el GTE, respecto a Continuar con la selección de los métodos del Tipo IV caso por caso cuando se presente una “razón justificable y motivadora” hasta que se desarrollen criterios de selección apropiados y restablecer el GTE para desarrollar criterios de coexistencia o equivalencia para los métodos de Tipo I y Tipo IV.

En respuesta al punto número 3, preguntas para el debate, la posición del Chile es la siguiente:

1.- Analizar lo que se considera más apropiado, si la coexistencia de métodos de Tipo I y Tipo IV como excepción, si el desarrollo de criterios para la coexistencia de métodos de Tipo I y Tipo IV o tomar la decisión de no que no haya coexistencia de métodos de Tipo I y Tipo IV.

Estamos de acuerdo con la coexistencia de los métodos tipo I y IV como excepción. Se está de acuerdo que se continúe trabajando con la selección de métodos caso a caso hasta que el GTE desarrolle criterios de coexistencia.

2.- Aclarar la relación entre los conceptos de coexistencia y equivalencia de los métodos Tipo I y Tipo IV.

Estamos de acuerdo con que el concepto adecuado sea coexistencia entre método tipo I y IV, sin embargo, se debe aclarar que se entenderá para Codex el uso del concepto equivalencia. Más aún sí no existe una definición clara del término “equivalencia” de un método para el Codex. En este sentido se debe tener cuidado en su utilización para los métodos tipo I y IV. Ya que podría ser necesario establecer el grado de equivalencia en determinados parámetros de desempeño si el termino se utiliza haciendo referencia a la performance analítica del método (precisión, veracidad, etc.), o si bien la equivalencia está referida al uso para el fin previsto en bases a aspectos de aplicabilidad del método o acceso al método (equivalencia para ser utilizado para control, dirimir, vigilancia o fiscalización).

3.- Aclarar el concepto de métodos equivalentes y si la equivalencia se aplicaría entre los métodos de Tipo I u otros métodos.

Se sugiere evaluar el concepto de equivalencia para los métodos tipo I, ya que, en este caso, debe primar el más alto nivel disponible, considerando la exactitud e incertidumbre del método, pero enfocado al fin previsto. Esto es importante considerar porque puede que un método por su principio analítico sea un método primario y no sea más preciso que otro, pero identifica al mensurando de manera más veraz, ejemplo un método estequiométrico versus un método cromatográfico.

Se debe ser cuidadoso, que, al definir un método tipo I, solo se consideré si es más exacto o con menor incertidumbre, cuando lo que se debe considerar es qué método cumple con la exactitud e incertidumbre requerida para el fin previsto. Por ejemplo, es sabido que el método de dilución isotópica para metales (ID-ICP – MS) es un método primario de mayor nivel de exactitud, sin embargo, para el fin previsto podría ser una técnica de muy alto costo considerando el nivel de requerimiento de metales en algunos alimentos que están en el orden de mg/kg. En este sentido un método ICP-MS o AAS-Llama podría se suficiente y tener la categoría de método tipo I, y ser aplicable y estar al acceso de más países considerando la inclusividad que debe tener el Codex.

4.- ¿Es más práctico establecer un criterio de equivalencia para todos los métodos del Codex?

Primero se deberían establecer y acordar o que se entenderá por criterio de equivalencia. Al definirse el concepto de equivalencia se debe tener en consideración, al momento de incorporar el concepto de equivalencia, si se aplicará grado o porcentaje de equivalencia, con un grado o porcentaje de aceptación, para ser considerados equivalentes o bien la equivalencia en el uso que destinará el Codex para el método.

5.- Si se establecieran tales criterios o incluso procedimientos generales para evaluar la coexistencia o equivalencia de los métodos de Tipo I y Tipo IV, ¿dónde residirían en el Codex, como parte del Manual de Procedimiento o en un documento de orientación?

Se sugiere incluir un documento de orientación que sea citado en el manual de procedimientos y de este modo establecer una forma clara, entendida y acordada por todos los miembros del Codex para esta toma de decisión.

6.- Discutir en qué medida se podrían aplicar las “Directrices para establecer valores numéricos para los criterios”.

Al momento de incorporar un método tipo IV deben ser consideras las directrices para establecer valores numéricos para los criterios, estos valores deben ser provistos desde los comités de productos para su evaluación en el CCMAS. Es importante tener en consideración, que no todos los métodos cuentan con valores numéricos, existen métodos antiguos, que no cuentan con éstos y son métodos usados históricamente con excelentes resultados.